ALTO SHAAM®

Holding Cabinets

Electric

10•18W

COMBI WARMER MATE®

Models:

10•18W
12•20W
12•20MW
20•20W
20•20MW

12•20MW

20•20MW

- **INSTALLATION**
- **OPERATION**
- **MAINTENANCE**

24•7
Your Service Hotline
1-800-558-8744

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 USA
PHONE: 262.251.3800 • 800.558.8744 USA/CANADA FAX: 262.251.7067 • 800.329.8744 U.S.A. ONLY
WEBSITE: www.alto-shaam.com

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DELIVERY

This Alto-Shaam appliance has been thoroughly tested and inspected to insure only the highest quality unit is provided. Upon receipt, check for any possible shipping damage and report it at once to the delivering carrier. ***See Transportation Damage and Claims section located in this manual.***

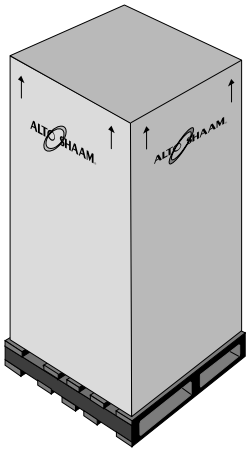
This appliance, complete with unattached items and accessories, may have been delivered in one or more packages. Check to ensure that all standard items and options have been received with each model as ordered.

Save all the information and instructions packed with the appliance. Complete and return the warranty card to the factory as soon as possible to assure prompt service in the event of a warranty parts and labor claim.

This manual must be read and understood by all people using or installing the equipment model. Contact the Alto-Shaam service department if you have any questions concerning installation, operation, or maintenance.

NOTE: All claims for warranty must include the full model number and serial number of the unit.

UNPACKING



1. Carefully remove the appliance from the carton or crate.

   NOTE: Do not discard the carton and other packaging material until you have inspected the unit for hidden damage and tested it for proper operation.

2. Read all instructions in this manual carefully before initiating the installation of this appliance.

   DO NOT DISCARD THIS MANUAL.
   This manual is considered to be part of the appliance and is to be provided to the owner or manager of the business or to the person responsible for training operators. ***Additional manuals are available from the Alto-Shaam service department.***

3. Remove all protective plastic film, packaging materials, and accessories from the appliance before connecting electrical power. Store any accessories in a convenient place for future use.

SAFETY PROCEDURES AND PRECAUTIONS

Knowledge of proper procedures is essential to the safe operation of electrically and/or gas energized equipment. In accordance with generally accepted product safety labeling guidelines for potential hazards, the following signal words and symbols may be used throughout this manual.

⚠ DANGER	Used to indicate the presence of a hazard that **will** cause severe personal injury, death, or substantial property damage if the warning included with this symbol is ignored.
⚠ WARNING	Used to indicate the presence of a hazard that **can** cause personal injury, possible death, or major property damage if the warning included with this symbol is ignored.
⚠ CAUTION	Used to indicate the presence of a hazard that can or will cause minor or moderate personal injury or property damage if the warning included with this symbol is ignored.
CAUTION	Used to indicate the presence of a hazard that can or will cause minor personal injury, property damage, or a potential unsafe practice if the warning included with this symbol is ignored.
NOTE:	Used to notify personnel of installation, operation, or maintenance information that is important but not hazard related.

1. This appliance is intended to cook, hold or process foods for the purpose of human consumption. No other use for this appliance is authorized or recommended.
2. This appliance is intended for use in commercial establishments where all operators are familiar with the purpose, limitations, and associated hazards of this appliance. Operating instructions and warnings must be read and understood by all operators and users.
3. Any troubleshooting guides, component views, and parts lists included in this manual are for general reference only and are intended for use by qualified technical personnel.
4. This manual should be considered a permanent part of this appliance. This manual and all supplied instructions, diagrams, schematics, parts lists, notices, and labels must remain with the appliance if the item is sold or moved to another location.

INSTALLATION

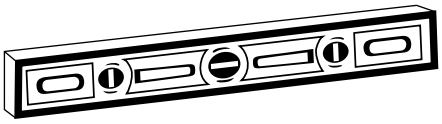
Site Installation

1. This appliance, complete with unattached items and accessories, may be delivered in one or more packages. Check to insure that all items ordered have been received.

2. This appliance is designed for the purpose of maintaining hot food at a temperature for safe consumption. The unit must be installed on a level surface in a location that will permit the equipment to function for its intended purpose and allow adequate access for proper cleaning and maintenance.

3. The appliance must not be installed in any area where it will be affected by steam, grease, dripping water, high temperatures, or any other severely adverse conditions.

4. Level the appliance from side-to-side and front-to-back with the use of a spirit level.



5. In order to maintain standards established by the National Sanitation Foundation, floor models must be sealed at bottom by NSF approved sealant, or equipped with casters, or 6" (152mm) legs to provide minimum unobstructed space beneath the unit. Warranty will become null and void if these directions are not followed.

CAUTION

TO PREVENT PERSONAL INJURY, USE CAUTION WHEN MOVING OR LEVELING THIS APPLIANCE.

CLEARANCE REQUIREMENTS

3-inches (76mm) at the back

2-inches (51mm) at the top

1-inch (25mm) at both sides

DANGER

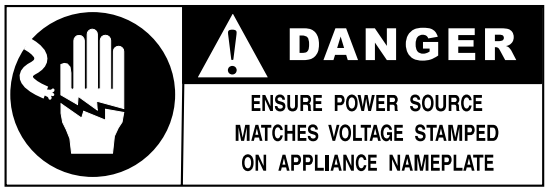
IMPROPER INSTALLATION, ALTERATION, ADJUSTMENT, SERVICE OR MAINTENANCE COULD RESULT IN SEVERE INJURY, DEATH OR CAUSE PROPERTY DAMAGE.

WEIGHT			
	10•18W		**w/optional trolley**
NET	235 lb (107 kg)	EST.	280 lb (127 kg)
SHIP	270 lb (122 kg)	EST.	385 lb (175 kg)
	12•20		**w/optional trolley**
NET	410 lb (186 kg)	EST.	535 lb (243 kg)
SHIP	440 lb (200 kg)	EST.	565 lb (256 kg)
	20•20		**w/optional trolley**
NET	540 lb (245 kg)	EST.	715 lb (324 kg)
SHIP	580 lb (263 kg)	EST.	755 lb (342 kg)

INSTALLATION

Electrical Installation

1. An identification tag is permanently mounted on the cabinet.



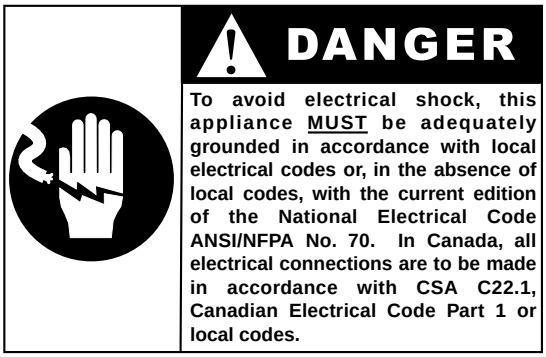
2. Plug the unit into a properly grounded receptacle ONLY. Arcing will occur when connecting or disconnecting the unit unless all controls are in the "OFF" position.

3. Position the unit so the cord is easily accessible in case of any emergencies. If necessary, a proper receptacle or outlet configuration, as required for the unit, must be installed by a licensed electrician in accordance with applicable, local electrical codes.

230V:

To prevent an electrical shock hazard between the appliance and other appliances or metal parts in close vicinity, an equalization-bonding stud is provided. An equalization bonding lead must be connected to this stud and the other appliances / metal parts to provide sufficient protection against potential difference. The terminal is marked with the following symbol. ⏚

NOTE: The appliance must be connected to an electrical circuit that is protected by an external GFCI outlet.


DANGER
To avoid electrical shock, this appliance MUST be adequately grounded in accordance with local electrical codes or, in the absence of local codes, with the current edition of the National Electrical Code ANSI/NFPA No. 70. In Canada, all electrical connections are to be made in accordance with CSA C22.1, Canadian Electrical Code Part 1 or local codes.

ELECTRICAL – Model 10•18 COMBIMATE

VOLTAGE	PHASE	CYCLE/HZ	AMPS	kW	CORD & PLUG INCLUDED
208-240	at 208 1	50/60	13.2	2.8	NEMA 6-20P 20A - 250V PLUG
	at 240 1	50/60	15.4	3.7	
230	at 230 1	50/60	14.7	3.4	CEE 7/7 220-230V PLUG

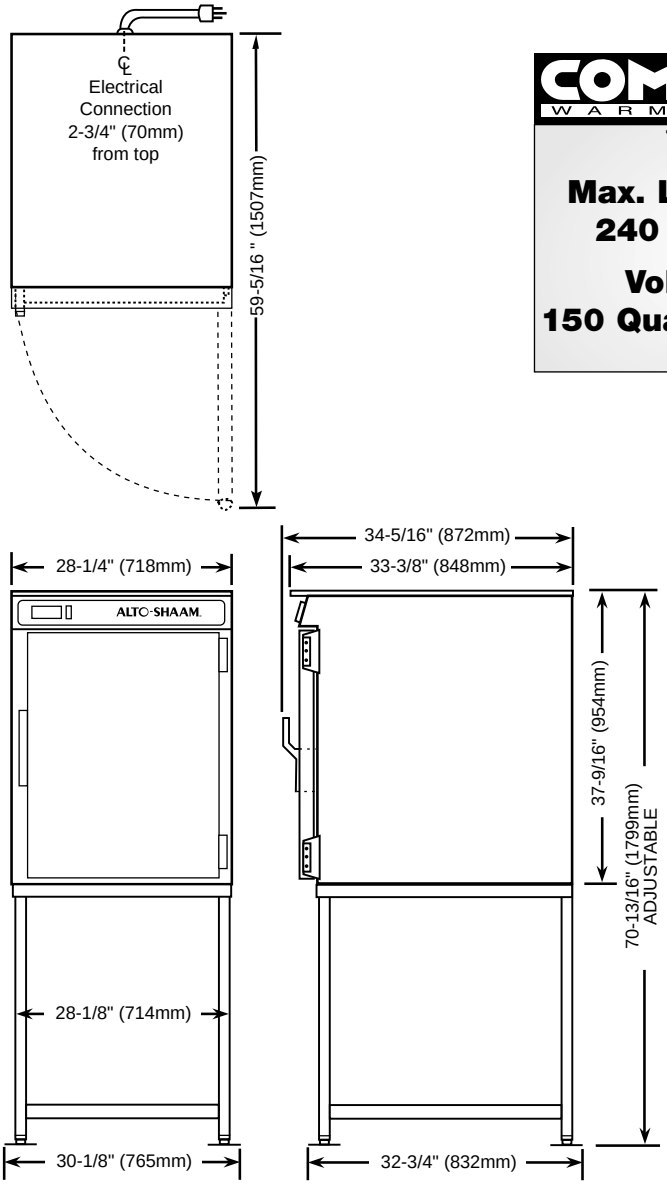
ELECTRICAL – Model 12•20 COMBIMATE

VOLTAGE	PHASE	CYCLE/HZ	AMPS	kW	CORD & PLUG INCLUDED
208-240	at 208 1	50/60	14.4	3.0	NEMA 6-20P 20A-250V PLUG
	at 240 1	50/60	16.2	3.9	
230	at 230 1	50/60	14.8	3.4	CEE 7/7 220-230V PLUG

ELECTRICAL – Model 20•20 COMBIMATE

VOLTAGE	PHASE	CYCLE/HZ	AMPS	kW	CORD & PLUG INCLUDED
208 - 220 - 208	at 208 1	50/60	14.4	3.0	NEMA 6-20P 20A-250V PLUG
	at 220 1	50/60	15.0	3.4	
240 -	at 240 1	50/60	16.7	4.0	
230	at 230 1	50/60	15.5	3.5	CEE 7/7 220-230V PLUG

INSTALLATION



COMBI MATE WARMER

10▪18W

Max. Load Capacity
240 lbs. (108 kg)

Volume Max.
150 Quarts (190 liters)

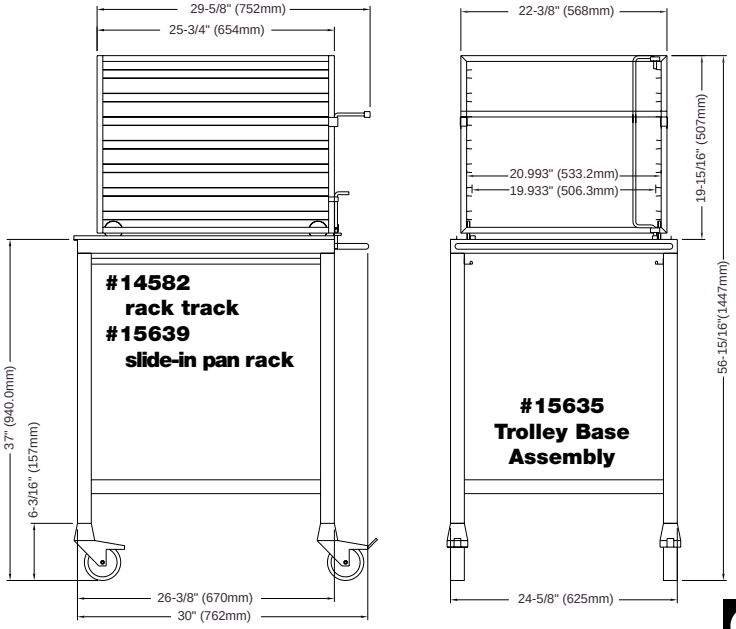
Do <u>not</u> operate this holding cabinet <u>without</u> its appropriate Slide-in Pan Rack and Trolley

CAUTION

Options & Accessories
Models 7•14, 10•10, and 10•18

DESCRIPTION	PART NO
Slide-In-Pan-Rack (Fits 7•14 Combitherm Oven & QC-40 Quickchiller)	15639
Slide-In-Pan-Rack (Fits 10•10 Combitherm Oven & QC-40 Quickchiller)	15637
Slide-In-Pan-Rack (Fits 10•18 Combitherm Oven & QC-40 Quickchiller)	15638
Rack-Track (Fits inside 7•14 & 10•18 Combitherm Ovens & 10•18W)	14582
Rack-Track (Fits inside 10•10 Combitherm Oven)	14940
Trolley Base Assembly	15635
Stainless Steel Wire Shelves for Pan Rack 15638 and 15639	SH-22473
Stainless Steel Wire Shelves for Pan Rack 15637	SH-2903

RACK MANAGEMENT TROLLEY SYSTEM FOR 7•14 COMBITHERM, 10•18W & QC-40

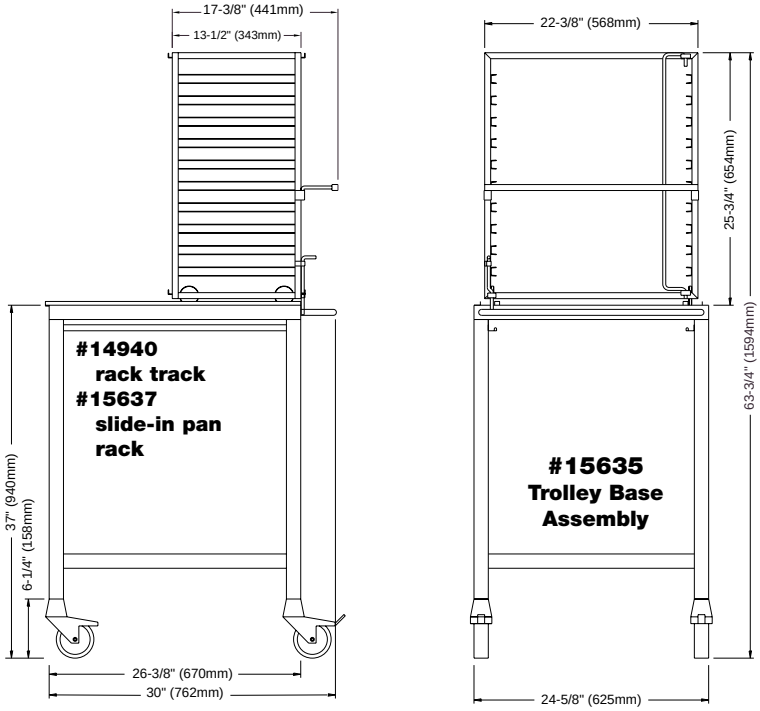


COMBI WARMER MATE®

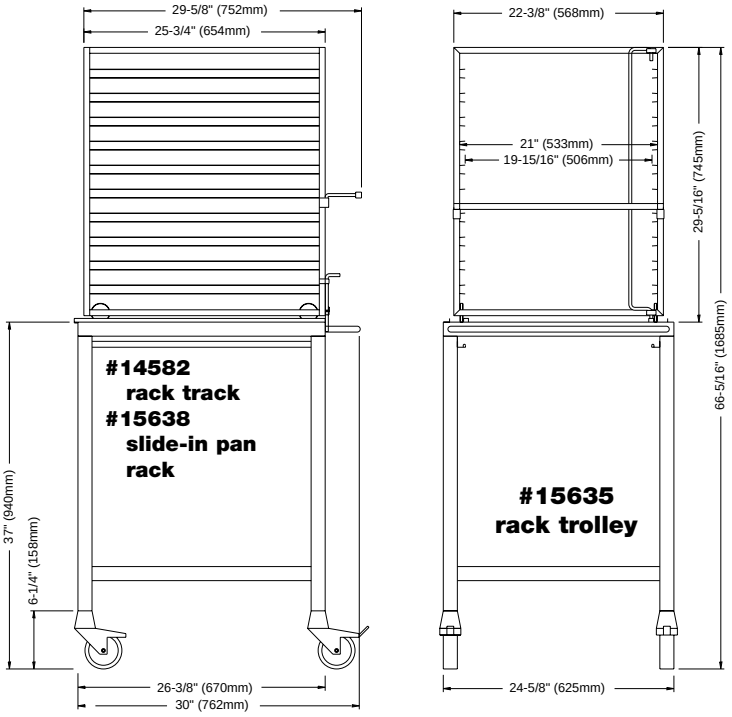
10•18W

TROLLEY SYSTEMS

RACK MANAGEMENT TROLLEY SYSTEM FOR 10•10 COMBITHERM, 10•18W & QC-40



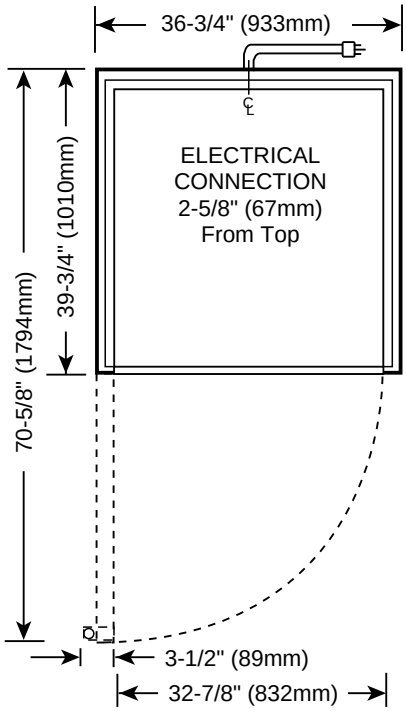
RACK MANAGEMENT TROLLEY SYSTEM FOR 10•18 COMBITHERM, 10•18W & QC-40



INSTALLATION

CAUTION

Do <u>not</u> operate this holding cabinet <u>without</u> its appropriate Roll-in Cart.

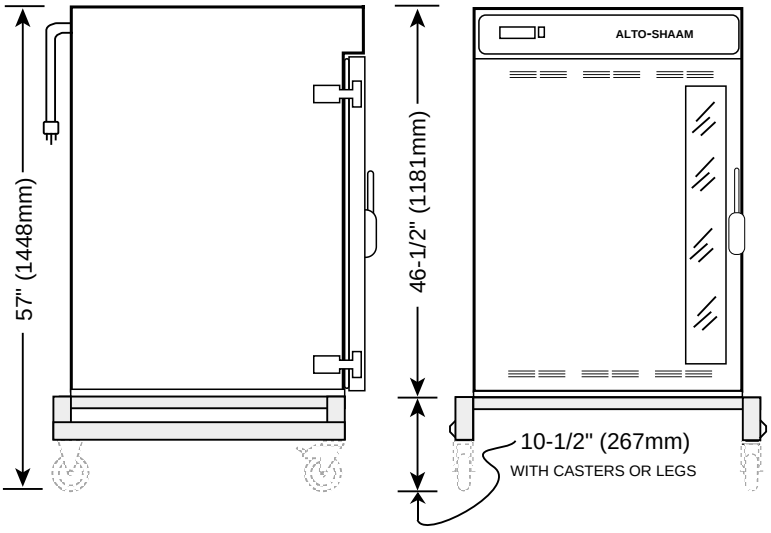


COMBI MATE WARMER

12▪20W, MW

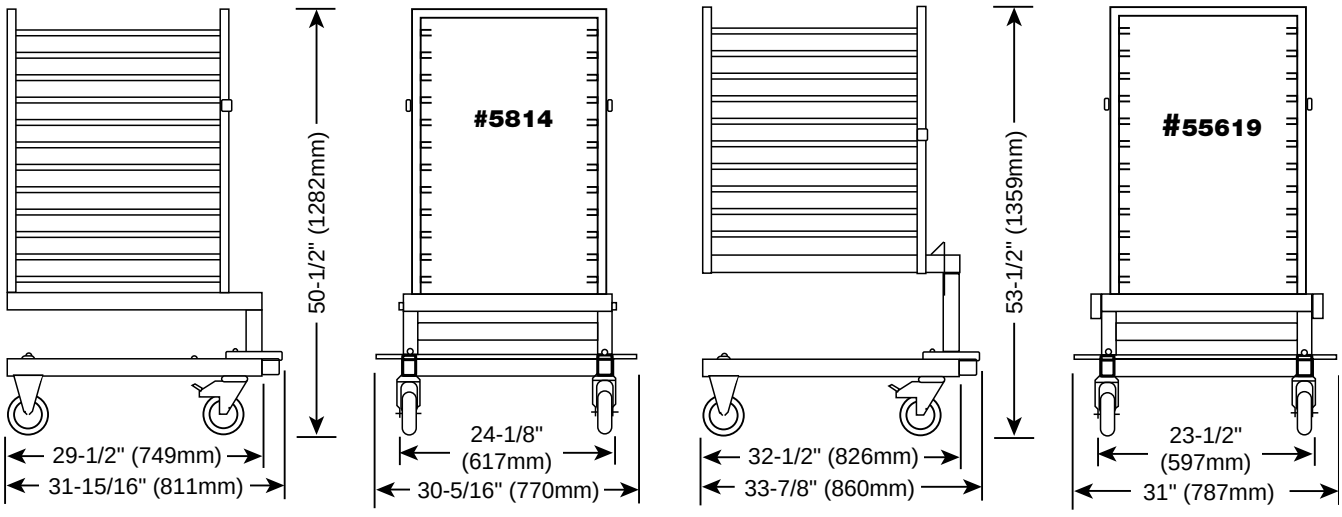
Max. Load Capacity 288 lbs. (131 kg)

Volume Max. 180 Quarts (228 liters)



Options & Accessories
Model 12•20 Combimate™ Warmers

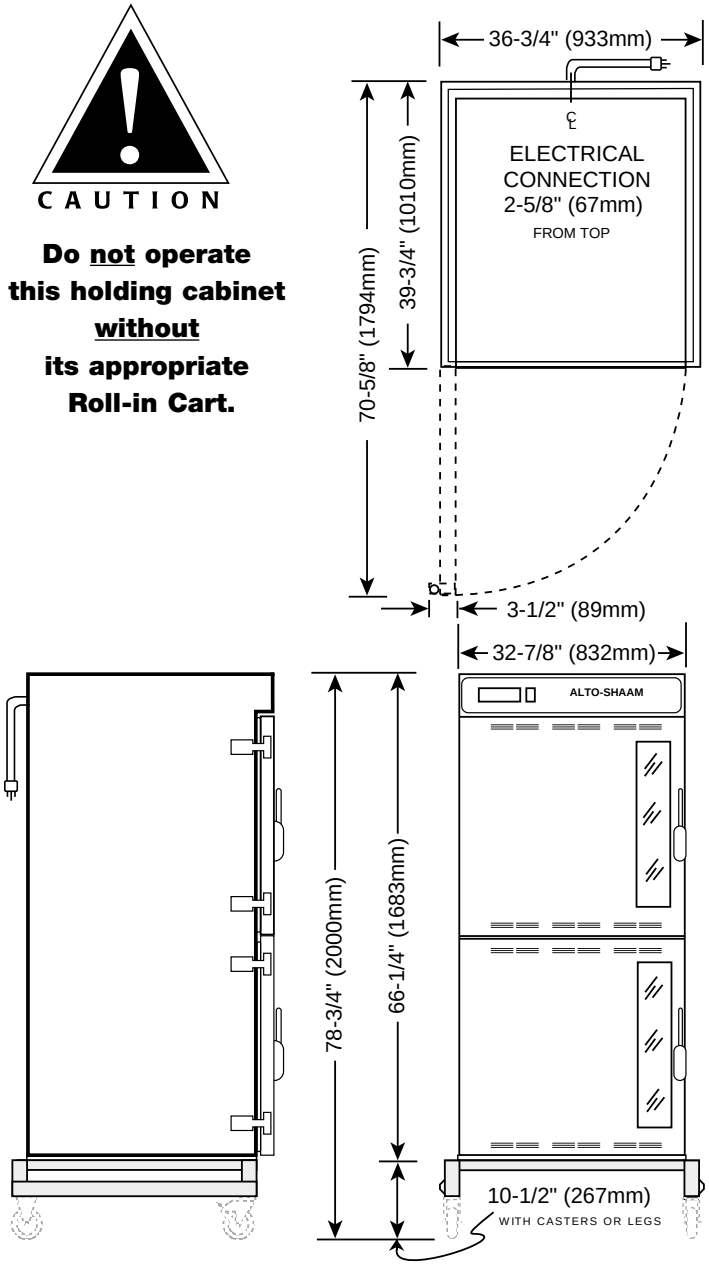
DESCRIPTION	PART NO.
Preheat Sealing Strip	14598
Model 12•20 Roll-in Pan Cart, electric oven	5814
Model 12•20G Roll-in Pan Cart, gas oven	55619
Model 12•20 Roll-in Plate Cart, electric	UN-25992
Model 12•20G Roll-in Plate Cart, gas	5002621
Compatible with Combitherm Model 12•20 Oven and QC-50 Quickchiller	
Stainless Steel Wire Shelves (to accommodate full-size sheet pans)	SH-22473



INSTALLATION

CAUTION

Do not operate this holding cabinet without its appropriate Roll-in Cart.



COMBI MATE WARMER

20▪20W, MW

Max. Load Capacity 480 lbs. (218 kg)

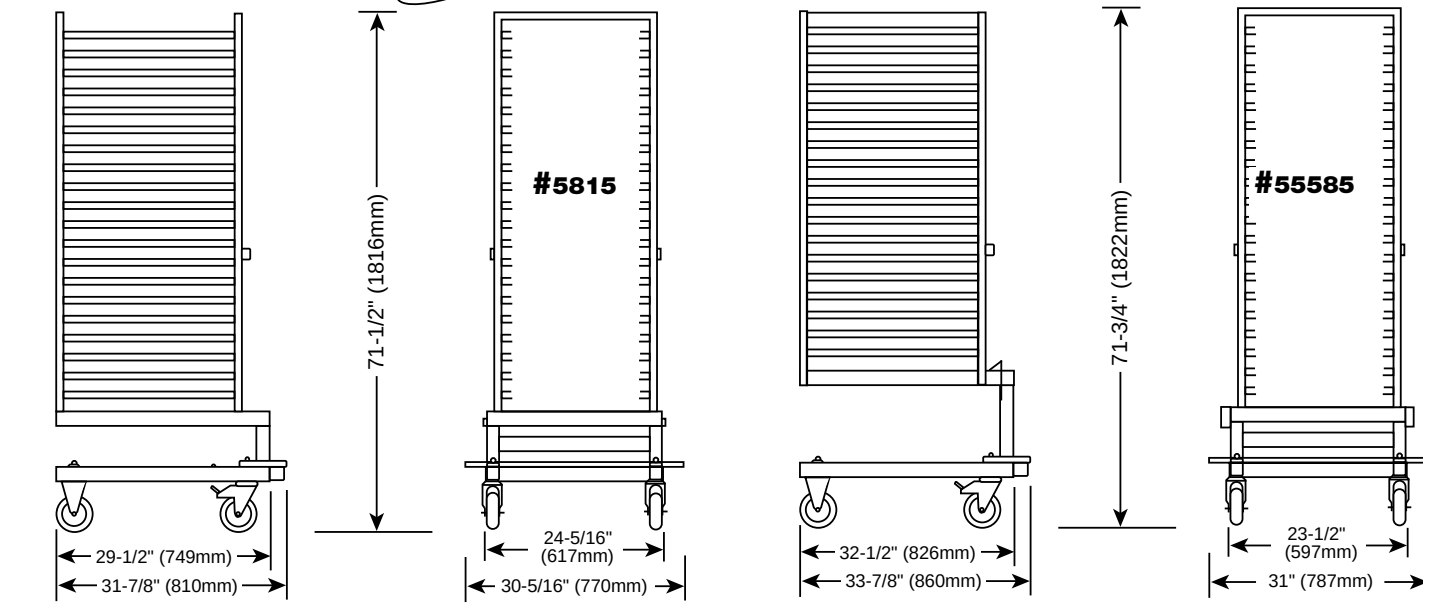
Volume Max. 300 Quarts (380 liters)

Options & Accessories
Model 20•20 Combimate™ Warmers

DESCRIPTION	PART NO.
Preheat Sealing Strip	14598
Model 20•20 Roll-in Pan Cart, electric	5815
Model 20•20G Roll-in Pan Cart, gas	55585
Model 20•20 Roll-in Plate Cart, electric	UN-25330
Model 20•20G Roll-in Plate Cart, gas	5002622

Compatible with
Combitherm Model 20•20 Oven
and QC-100 Quickchiller

Stainless Steel Wire Shelves SH-22473
(to accommodate full-size sheet pans)



OPERATION

User Safety Information

This appliance is intended for use in commercial establishments where all operators are familiar with the purpose, limitations, and associated hazards of this appliance. Operating instructions and warnings must be read and understood by all operators and users.

1. **Make sure the unit is connected to the appropriate power source.**
2. **Use hand protection when handling hot items.**
3. **Preheat the unit for 30 minutes before use.**
4. **Be certain only hot foods are placed into the cabinet.**
5. **Do <u>not</u> operate the holding cabinet <u>without</u> the Roll-in Cart on Models 12•20 and 20•20 or Slide-in Pan Rack on Model 10•18W.**

HEATING CHARACTERISTICS

The cabinet is equipped with a special, low-heat-density heating cable. Through the Halo Heat concept, the heating cable is mounted against the walls of the warming compartment to provide an evenly applied heat source controlled by a thermostat. The design and operational characteristics of the cabinet eliminate the need for a moisture pan or a heat circulating fan. Through even heat application, the quality of a food product is maintained up to as much as several hours.

The primary purpose of the Model 10•18W, 12•20, and 20•20 Holding Cabinet is to operate as a functional extension of the Combitherm Combination Oven/ Steamer. The combination oven is for high volume production – the Halo Heat companion holding cabinet preserves the quality and extends the longest possible holding life. The Slide-In-Pan-Rack for the 10•18W and the Roll-In Cart for the 12•20 and 20•20 are completely interchangeable between the Combitherm Oven and the Halo Heat Companion Holding Cabinet, along with compatible Alto-Shaam Quickchillers.

The Combitherm Combination Oven/Steamer, along with the Halo Heat companion holding cabinet and Alto-Shaam Quickchiller give the food service operator the advantage of advance full-load preparation, better work-load scheduling, and the ability to hold the product for prolonged periods without major deterioration.

BEFORE INITIAL USE:

Before operating the unit, clean both the interior and exterior with a clean, damp cloth and mild soap solution. Rinse carefully with a sponge and clean water. Clean and install the Roll-in Cart on Models 12•20 and 20•20 or Slide-in Rack on the Model 10•18W.

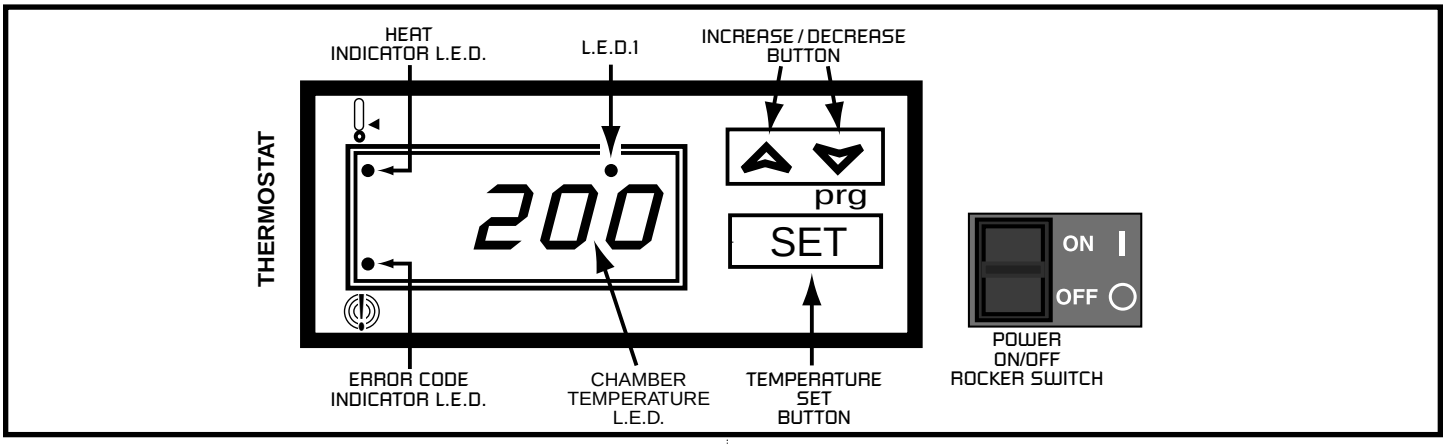
PRODUCT\PAN CAPACITY - Model 10•18 COMBIMATE
240 lbs (108 kg) MAXIMUM
VOLUME MAXIMUM: 150 QUARTS (190 LITERS)
FULL-SIZE PANS: Twenty (20) 20" x 12" x 2-1/2" MAXIMUM
GN 1/1: Twenty (20) (530mm x 325mm x 65mm)
GN 2/1: Ten (10) (650mm x 530mm x 65mm)
FULL-SIZE SHEET PANS: Five (5) 18" x 26" x 1" (10 with added Shelves)

PRODUCT\PAN CAPACITY - Model 12•20 COMBIMATE
288 lbs (131 kg) MAXIMUM
VOLUME MAXIMUM: 180 QUARTS (228 LITERS)
FULL-SIZE PANS: Twenty-four (24) 20" x 12" x 2-1/2" MAXIMUM
GN 1/1: Twenty-four (24) (530mm x 325mm x 65mm)
GN 2/1: Twelve (12) (650mm x 530mm x 65mm)
FULL-SIZE SHEET PANS: Six (6) 18" x 26" x 1" (12 with added Shelves)

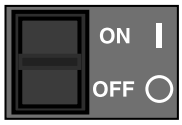
PRODUCT\PAN CAPACITY - Model 20•20 COMBIMATE
480 lbs (218 kg) MAXIMUM
VOLUME MAXIMUM: 300 QUARTS (380 LITERS)
FULL-SIZE PANS: Forty (40) 20" x 12" x 2-1/2" MAXIMUM
GN 1/1: Forty (40) (530mm x 325mm x 65mm)
GN 2/1: Twenty (20) (650mm x 530mm x 65mm)
FULL-SIZE SHEET PANS: Ten (10) 18" x 26" x 1" (20 with added Shelves)

OPERATION

Thermostat Control Description and Function



The L.E.D., Light Emitting Diode, referred to is an electronic device providing illumination. The control has a three-digit L.E.D. display. When the warming cabinet is in operation, the L.E.D. will show the chamber's internal temperature. The display will also show programming and diagnostic information.



ON/OFF Rocker Switch

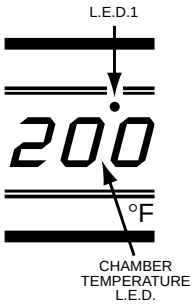
The Power On/Off Rocker Switch positions may be marked with the international "I" for On and "O" for Off.

UP/DOWN Arrow Rocker Button

The UP/DOWN arrow rocker button is used to increase or decrease the set-point temperature. The minimum set-point temperature is 90°F (32°C) while the maximum set-point temperature is 200°F (93°C).

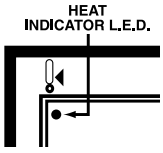
SET Button

The SET button is used to display the current set-point temperature or program a new set-point temperature. Pushing the SET button once will display the set-point temperature value for five seconds. Holding the SET button allows the programming mode to become active.



L.E.D. Display

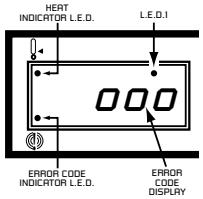
The L.E.D. display will show the set-point temperature value when programming, or the warming chamber's temperature when calling for heat. When programming a new set-point temperature, the L.E.D.1 indicator will blink. When a new set-point temperature is chosen, the Chamber Temperature L.E.D. will flash three times to confirm.



HEAT INDICATOR L.E.D.

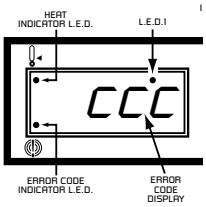
The Heat Indicator L.E.D. will illuminate and remain lit while the unit is calling for heat. It will go out when the air temperature inside the warming chamber reaches the set-point temperature on the control.

ERROR CODE DISPLAYS



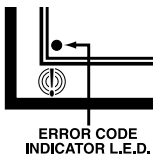
Open-Circuited

If "*000*" or "*PF0*" is displayed in the Error Code L.E.D., the sensor is open-circuited. Follow Trouble Shooting Guide instructions in this Operation and Care Manual.



Short-Circuited

If "*CCC*" or "*PFC*" is displayed in the Error Code L.E.D., the sensor is short-circuited. Follow Trouble Shooting Guide instructions in this Operation and Care Manual.

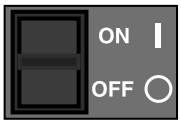


ERROR CODE INDICATOR L.E.D.

If either of the above mentioned errors codes should occur, the Error Code Indicator L.E.D. will be illuminated and remain so until error is cleared.

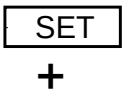
OPERATION

Programming and Operating Thermostat Control



Turn Power On

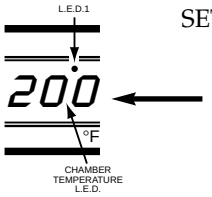
Press the "ON" or "I" position of the rocker switch to turn on control.



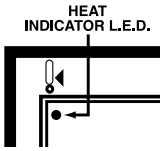
CHANGE SET-POINT TEMPERATURE

Press and hold the SET button for at least 3 seconds. After L.E.D.1 indicator blinks, release the Set Button. The control is now in the programming mode.

Press and hold the UP or DOWN arrow rocker button to change the value shown in the display. Store the value by pressing the SET button.



The new set-point value will flash three times to confirm.



HEAT INDICATOR L.E.D.

The Heat Indicator L.E.D. will illuminate as the warming chamber calls for heat. It will extinguish when the warming chamber's interior temperature reaches the set-point.

PREHEATING THE UNIT

Always preheat the unit at 200°F (93°C) for 30 minutes before loading the cabinet with hot food.

NOTE: Do <u>not</u> operate the holding cabinet <u>without</u> the Roll-in Cart on Models 12•20 and 20•20 or Slide-in Pan Rack on Model 10•18W.

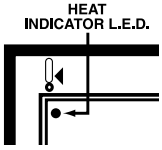
LOADING THE CABINET

Load the cabinet with ***hot food only***. The purpose of this unit is to maintain hot food at proper serving temperature. Use a food thermometer to make certain all food has reached an internal temperature range of 140° to 160°F (60° to 71°C).

Make certain door is securely closed after loading. Reset the control to 160°F (71°C).

This will not necessarily be the final setting.
Proper temperature range for the food being held will depend on the type and quantity of product. It is advisable to periodically check the internal temperature of each item to assure maintenance of proper food serving temperature.

CAUTION



The unit should be unplugged and a qualified service technician should be consulted if any of the following situations occur:

- The Heat Indicator L.E.D. does not illuminate after normal start-up.
- The warming cabinet does not hold the temperature as set.
- The warming cabinet fails to heat with the L.E.D. illuminated.
- The cabinet heats continuously with the control “OFF”.
- Refer to Trouble Shooting Guide in this manual.

GENERAL HOLDING GUIDELINES

Chefs, cooks and other specialized food service personnel employ varied methods of cooking. Proper holding temperatures for a specific food product must be based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures must also be correlated with palatability in determining the length of holding time for a specific product.

Halo Heat maintains the maximum amount of product moisture content without the addition of water, water vapor, or steam. Maintaining maximum natural product moisture preserves the natural flavor of the product and provides a more genuine taste. In addition to product moisture retention, the gentle properties of Halo Heat maintain a consistent temperature throughout the cabinet without the necessity of a heat distribution fan, thereby preventing further moisture loss due to evaporation or dehydration.

When product is removed from a high temperature cooking environment for immediate transfer into equipment with the lower temperature required for hot food holding, condensation can form on the outside of the product and on the inside of plastic containers used in self-service applications. Allowing the product to release the initial steam and heat produced by high temperature cooking can alleviate this condition. To preserve the safety and quality of freshly cooked foods however, a maximum of 1 to 2 minutes must be the only time period allowed for the initial heat to be released from the product.

This unit is equipped with a thermostat control between 60° and 200°F (16° and 93°C). If the unit is equipped with vents, close the vents for moist holding and open the vents for crisp holding. Use a metal-stemmed thermometer to measure the internal temperature of the product being held. Adjust the thermostat setting to achieve the best overall setting based on internal product temperature.

HOLDING TEMPERATURE RANGE

MEAT	FAHRENHEIT	CELSIUS
BEEF ROAST — Rare	140°F	60°C
BEEF ROAST — Med/Well Done	160°F	71°C
BEEF BRISKET	160° — 175°F	71° — 79°C
CORN BEEF	160° — 175°F	71° — 79°C
PASTRAMI	160° — 175°F	71° — 79°C
PRIME RIB — Rare	140°F	60°C
STEAKS — Broiled/Fried	140° — 160°F	60° — 71°C
RIBS — Beef or Pork	160°F	71°C
VEAL	160° — 175°F	71° — 79°C
HAM	160° — 175°F	71° — 79°C
PORK	160° — 175°F	71° — 79°C
LAMB	160° — 175°F	71° — 79°C
POULTRY		
CHICKEN — Fried/Baked	160° — 175°F	71° — 79°C
DUCK	160° — 175°F	71° — 79°C
TURKEY	160° — 175°F	71° — 79°C
GENERAL	160° — 175°F	71° — 79°C
FISH/SEAFOOD		
FISH — Baked/Fried	160° — 175°F	71° — 79°C
LOBSTER	160° — 175°F	71° — 79°C
SHRIMP — Fried	160° — 175°F	71° — 79°C
BAKED GOODS		
BREADS/ROLLS	120° — 140°F	49° — 60°C
MISCELLANEOUS		
CASSEROLES	160° — 175°F	71° — 79°C
DOUGH — Proofing	80° — 100°F	27° — 38°C
EGGS —Fried	150° — 160°F	66° — 71°C
FROZEN ENTREES	160° — 175°F	71° — 79°C
HORS D'OEUVRES	160° — 180°F	71° — 82°C
PASTA	160° — 180°F	71° — 82°C
PIZZA	160° — 180°F	71° — 82°C
POTATOES	180°F	82°C
PLATED MEALS	180°F	82°C
SAUCES	140° — 200°F	60° — 93°C
SOUP	140° — 200°F	60° — 93°C
VEGETABLES	160° — 175°F	71° — 79°C

The holding temperatures listed are suggested guidelines only.

CLEANING AND PREVENTIVE MAINTENANCE

PROTECTING STAINLESS STEEL SURFACES

It is important to guard against corrosion in the care of stainless steel surfaces. Harsh, corrosive, or inappropriate chemicals can completely destroy the protective surface layer of stainless steel. Abrasive pads, steel wool, or metal implements will abrade surfaces causing damage to this protective coating and will eventually result in areas of corrosion. Even water, particularly hard water that contains high to moderate concentrations of chloride, will cause oxidation and pitting that result in rust and corrosion. In addition, many acidic foods spilled and left to remain on metal surfaces are contributing factors that will corrode surfaces.

Proper cleaning agents, materials, and methods are vital to maintaining the appearance and life of this appliance. Spilled foods should be removed and the area wiped as soon as possible but at the very least, a minimum of once a day. Always thoroughly rinse surfaces after using a cleaning agent and wipe standing water as quickly as possible after rinsing.

CLEANING AGENTS

Use non-abrasive cleaning products designed for use on stainless steel surfaces. Cleaning agents must be chloride-free compounds and must not contain quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel surfaces. Always use the proper cleaning agent at the manufacturer's recommended strength. Contact your local cleaning supplier for product recommendations.

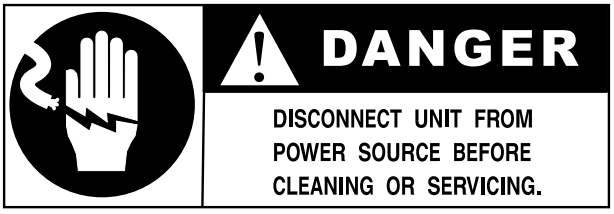
CLEANING MATERIALS

The cleaning function can usually be accomplished with the proper cleaning agent and a soft, clean cloth. When more aggressive methods must be employed, use a non-abrasive scouring pad on difficult areas and make certain to scrub with the visible grain of surface metal to avoid surface scratches. Never use wire brushes, metal scouring pads, or scrapers to remove food residue.

NO SCRAPERS
NO WIRE BRUSHES
NO STEEL PADS
CAUTION
TO PROTECT STAINLESS STEEL SURFACES, COMPLETELY AVOID THE USE OF ABRASIVE CLEANING COMPOUNDS, CHLORIDE BASED CLEANERS, OR CLEANERS CONTAINING QUATERNARY SALTS. NEVER USE HYDROCHLORIC ACID (MURIATIC ACID) ON STAINLESS STEEL. NEVER USE WIRE BRUSHES, METAL SCOURING PADS OR SCRAPERS.

CARE AND CLEANING

The cleanliness and appearance of this unit will contribute considerably to operating efficiency and savory, appetizing food. Good equipment that is kept clean works better and lasts longer.



CLEAN THE UNIT THOROUGHLY AFTER EACH USE

1. Disconnect appliance from power source, and let cool.
2. Remove, cover or wrap, and store unused products under refrigeration.
3. Remove all detachable items such as plate carriers, wire shelves, side racks, and any drip pans. Clean these items separately.
4. Clean interior with a damp cloth or sponge and any good commercial detergent at the recommended strength.

5. Spray heavily soiled areas with a water soluble degreaser and let stand for 10 minutes, then remove soil with a plastic scouring pad.

NOTE: Avoid the use of abrasive cleaning compounds, chloride based cleaners, or cleaners containing quaternary salts. ***Never*** use hydrochloric acid (muriatic acid) on stainless steel.

6. Clean control panel, door vents, door handles, and door gaskets thoroughly since these areas harbor food debris.
7. Rinse surfaces by wiping with sponge and clean warm water.
8. Remove excess water with sponge and wipe dry with a clean cloth or air dry. Leave door open until interior is completely dry. Replace shelves.
9. Interior can be wiped with a sanitizing solution after cleaning and rinsing. This solution must be approved for use on stainless steel food contact surfaces.
10. To help maintain the protective film coating on polished stainless steel, clean the exterior of the cabinet with a cleaner recommended for stainless steel surfaces. Spray the cleaning agent on a clean cloth and wipe with the grain of the stainless steel.
11. Clean glass with a window cleaner.
12. Cart Cleaning ––

    Remove cart to a wash area and use any mild cleaning detergent and warm water. Handwipe all framing, slides, drip pan, and base. Thoroughly clean debris from the casters. A spray hose can be used for cart cleaning. Rinse detergent solution off with warm water. Wipe or spray with a sanitizing solution designed for use on metal and vinyl food contact surfaces. Allow cart to air dry.

Always follow appropriate state or local health (hygiene) regulations regarding all applicable cleaning and sanitation requirements for foodservice equipment.

DANGER
AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.
SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.
WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED.

SANITATION

Food flavor and aroma are usually so closely related that it is difficult, if not impossible, to separate them. There is also an important, inseparable relationship between cleanliness and food flavor. Cleanliness, top operating efficiency, and appearance of equipment contribute considerably to savory, appetizing foods. Good equipment that is kept clean, works better and lasts longer.

Most food imparts its own particular aroma and many foods also absorb existing odors. Unfortunately, during this absorption, there is no distinction between GOOD and BAD odors. The majority of objectionable flavors and odors troubling food service operations are caused by bacteria growth. Sourness, rancidity, mustiness, stale or other OFF flavors are usually the result of germ activity.

The easiest way to insure full, natural food flavor is through comprehensive cleanliness. This means good control of both visible soil (dirt) and invisible soil (germs). A thorough approach to sanitation will provide essential cleanliness. It will assure an attractive appearance of equipment, along with maximum efficiency and utility. More importantly, a good sanitation program provides one of the key elements in the prevention of food-borne illnesses.

A controlled holding environment for prepared foods is just one of the important factors involved in the prevention of food-borne illnesses. Temperature monitoring and control during receiving, storage, preparation, and the service of foods are of equal importance.

The most accurate method of measuring safe temperatures of both hot and cold foods is by internal product temperature. A quality thermometer is an effective tool for this purpose, and should be routinely used on all products that require holding at a specific temperature.

A comprehensive sanitation program should focus on the training of staff in basic sanitation procedures. This includes personal hygiene, proper handling of raw foods, cooking to a safe internal product temperature, and the routine monitoring of internal temperatures from receiving through service.

Most food-borne illnesses can be prevented through proper temperature control and a comprehensive program of sanitation. Both these factors are important to build quality service as the foundation of customer satisfaction. Safe food handling practices to prevent food-borne illness is of critical importance to the health and safety of your customers. HACCP, an acronym for Hazard Analysis (at) Critical Control Points, is a quality control program of operating procedures to assure food integrity, quality, and safety. Taking steps necessary to augment food safety practices are both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this manual, additional information is available by contacting:

Center for Food Safety and Applied Nutrition
Food and Drug Administration
1-888-SAFEFOOD

INTERNAL FOOD PRODUCT TEMPERATURES		
HOT FOODS		
DANGER ZONE	40° TO 140°F	(4° TO 60°C)
CRITICAL ZONE	70° TO 120°F	(21° TO 49°C)
SAFE ZONE	140° TO 165°F	(60° TO 74°C)
COLD FOODS		
DANGER ZONE	ABOVE 40°F	(ABOVE 4°C)
SAFE ZONE	36°F TO 40°F	(2°C TO 4°C)
FROZEN FOODS		
DANGER ZONE	ABOVE 32°F	(ABOVE 0°C)
CRITICAL ZONE	0° TO 32°F	(-18° TO 0°C)
SAFE ZONE	0°F OR BELOW	(-18°C OR BELOW)

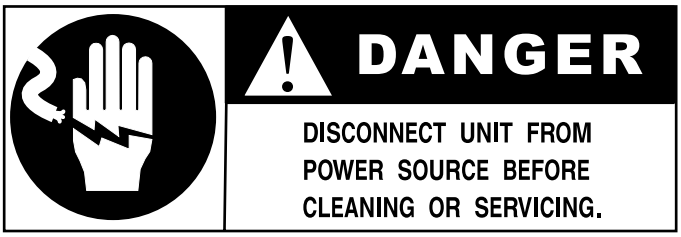
ELECTRONIC CONTROL ACCURACY

The electronic control is a precise instrument and is designed to offer trouble-free service. If you suspect the temperature inside the warming cabinet does not match the temperature indicated on the digital display, after stabilizing, follow the instructions listed below.

1. Check to make certain the unit voltage matches the power source. A power source less than that required to operate the unit will result in inaccurate temperatures.
2. Verify the temperature inside the holding compartment with a qualify thermal indicator.
   A. With the exception of the wire shelves, completely empty the holding compartment.
   B. Make certain the holding cabinet sensor, located inside the holding compartment at the left side of the unit, is completely clean.
   C. Suspend the thermal indicator in the center of the holding compartment.
   D. Allow the temperature set on the electronic thermostat to stabilize for a minimum of one hour before comparing the digital display with the reading on the thermal indicator.

   DO NOT OPEN THE CABINET DOOR(S) DURING THE TEMPERATURE STABILIZATION PERIOD.

If the reading on the thermal indicator does not match the digital display, there may be a problem with the air sensor. See troubleshooting guide in this manual, or call the factory service department for advice.



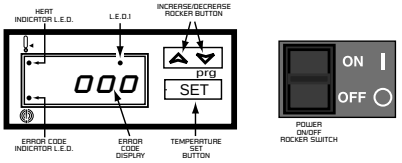
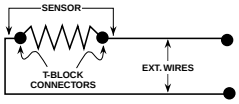
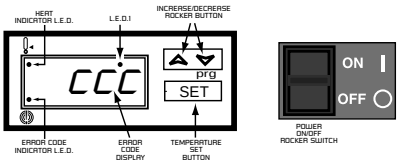
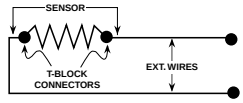
SERVICE

This chart is provided for the assistance of qualified technicians only and is not intended for use by untrained or unauthorized service personnel. If your unit is not operating properly, check the following before calling your authorized service agent. Check the power applied to the unit. Plug in outlet? Fuse OK?

CAUTION

Do not attempt to repair or service beyond this point. Contact manufacturer for nearest authorized service agent. Repairs made by any other service agent without prior authorization by manufacturer will void the warranty on the unit.

Trouble Shooting Guide

Error Code	Possible Cause	Action Required
1. Control displays "OOO" or "PFO". 	A. Sensor is open circuited.  B. Associated wiring is open circuited. C. Control is faulty.	Detach the sensor from the terminal block. Use an Ohm meter to measure the resistance of the sensor. Check sensor at 32°F (0°C) using a container of ice water. If Ohm reading is 100, replace display. If Ohm reading is not 100, replace sensor. Check wires for integrity. Check for proper and secure connections at the thermostat and terminal block. If necessary, re-secure the faulty connections. Energize system after the above steps have been completed. If control still reads "OOO or PFO", call service technician.
2. Control displays "CCC" or "PFC". 	A. Sensor is short circuited.  B. Associated wiring is short circuited. C. Control is faulty.	Detach the sensor from the terminal block. Use an Ohm meter to measure the resistance of the sensor. Check sensor at 32°F (0°C) using a container of ice water. If Ohm reading is 100, replace display. If Ohm reading is not 100, replace sensor. Check wires for integrity. Check for proper and secure connections at the thermostat and terminal block. If necessary, re-secure the faulty connections. Energize system after the above steps have been completed. If control still reads "CCC or PFC", call service technician.
3. Unit does not operate.	A. Insufficient power supply. B. Defective power cord or plug.	Check power source. Check and replace if necessary.
4. No display in electronic control.	A. Faulty power supply board. B. Faulty electronic control.	Check line voltage for 24V across pins 6 and 7 on the power supply board. Replace control.
5. Cannot control temperature but sensor and electronic control check out OK.	A. Faulty relay. B. Heating element sensor.	Replace relay. Replace element.
6. Temperature readout incorrect.	A. Dirty or faulty sensor. B. Faulty control.	Detach the sensor from the terminal block. Use an Ohm meter to measure the resistance of the sensor. Check sensor at 32°F (0°C) using a container of ice water. If Ohm reading is 100, replace display. If Ohm reading is not 100, replace sensor.

MODEL 10•18W

12/8/05 DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. BASE	1	14591
2. BASE FEET	4	FE-2916
3. BOTTOM ASSEMBLY	1	14589
4. BASE MOUNTING SCREW	4	SC-22423
– LOCK WASHERS	4	WS-2867
5. TOP ASSEMBLY	1	14590
6. TOP MOUNTING SCREW	4	SC-2425
7. CASING, LEFT HAND	1	13695
8. CASING, RIGHT HAND	1	13694
9. CASING MOUNTING SCREW	10	SC-2425
10. CORD, 208-240V	1	CD-3588
CORDSET: 230V (Type H07 RN-F)	1	CD-3922
– FILTER (230V only)	1	FI-33225
11. CORD PLATE MOUNTING SCREW	4	SC-2459
12. CASING BACK	1	12975
CASING BACK MOUNTING SCREW	2	SC-2425
CASING BACK INSULATION 25.5" x 116' (648mm x 35m)	.6	IN-2381
13. TUBE INSULATION:		
– 25.5"x 73' (711mm x 22m)	1.4	IN-22364
14. CABLE CONNECTION HARDWARE		
15. HEATING CABLE - 198' (60m)	1	CB-3045
16. DOOR ASSEMBLY	1	15281
– DOOR GASKET	1	GS-23573
– VENT PANEL (NOT SHOWN)	2	12385
– VENT SLIDE (NOT SHOWN)	2	12386
17. DOOR HANDLE	1	HD-22042
– DOOR HANDLE MOUNTING SCREW	3	SC-2073
18. DOOR HINGE: (1 PAIR)	1	HG-22338
– HINGE MOUNTING SCREWS	12	SC-2072
19. SENSOR	1	SN-33540
– METAL SENSOR GUARD	1	1493
– MOUNTING BLOCK	1	BK-24427
– BLOCK MOUNTING SCREWS	2	SC-2239
- SENSOR T-BLOCK	1	BK-33546
20. SOLID STATE RELAY	1	RL-3736
– HEAT SINK	1	HE-23421
21. THERMOSTAT	1	TT-33563
22. TRANSFORMER, 208-240V, 230V	1	TN-3935
23. POWER SWITCH	1	SW-3887
24. FUSE, 1 AMP, 208-240V, 230V	2	FU-33097
FUSE BLOCK, 208-240V, 230V	1	FU-3772
25. CONTROL PANEL OVERLAY	1	PE-24080
26. POWER TERMINAL BLOCK	1	BK-3019

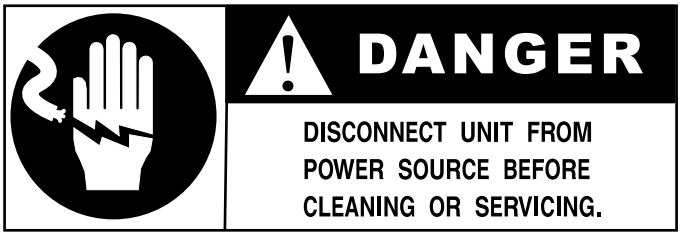
SERVICE VIEW • Next page

CABLE REPLACEMENT KIT
Models 10•18 & 12•20 Combimate™ Warmers

Cable Heating Service Kit ..... #4881

includes:

CB-3045	Cable Heating Element	210 feet
CR-3226	Ring Connector	12
IN-3488	Insulation	1 foot
BU-3105	Shoulder Bushing	12
BU-3106	Cup Bushing	12
SL-3063	Insulating Sleeve	12
TA-3540	Electrical Tape	1 roll
NU-2215	Hex Nut	24
ST-2439	Stud 10-32	12



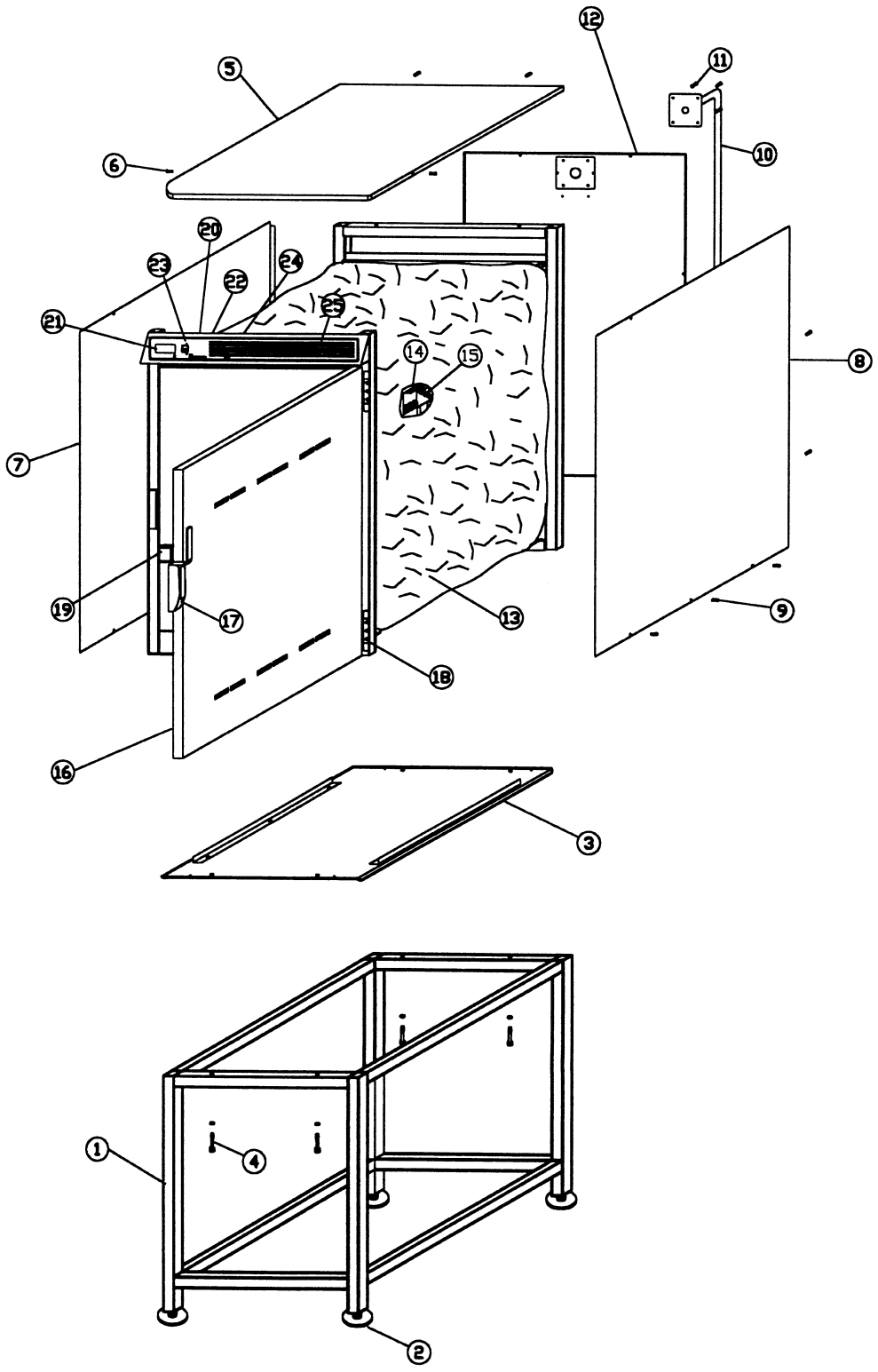
CABLE REPLACEMENT KIT
Model 20•20 Combimate™ Warmers

Cable Heating Service Kits ..... #14228 ..... #4879

includes:

CB-3045	Cable Heating Element	265 feet	112 feet
CR-3226	Ring Connector	8	6
IN-3488	Insulation	1 foot	1 foot
BU-3105	Shoulder Bushing	8	6
BU-3106	Cup Bushing	8	6
SL-3063	Insulating Sleeve	8	6
TA-3540	Electrical Tape	1 roll	1 roll
NU-2215	Hex Nut	16	12
ST-2439	Stud 10-32	8	6

10.18W
SERVICE VIEW
6/18/96
REV: 6/8/98
ECO#2880



SERVICE

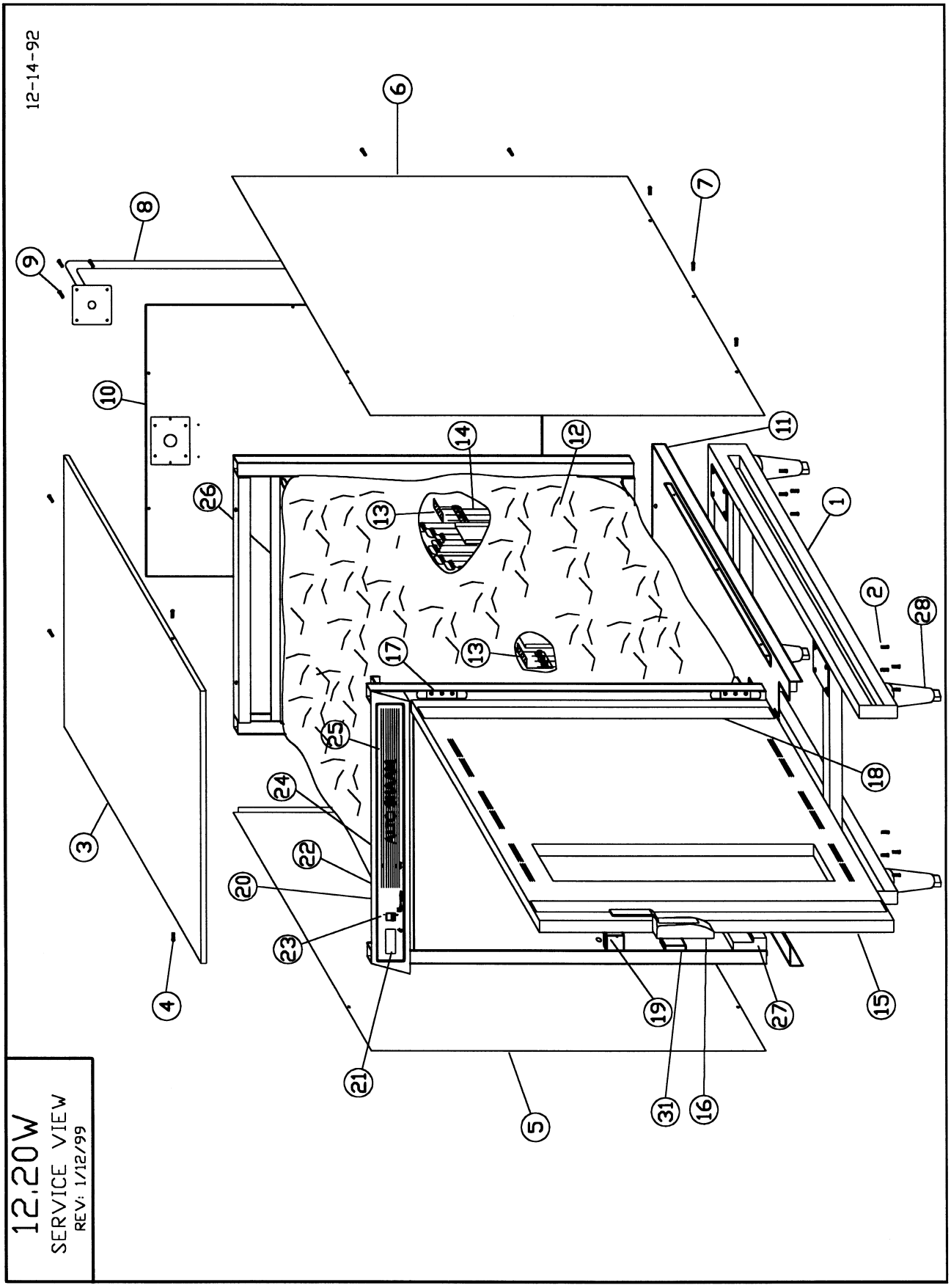
MODEL 12•20W

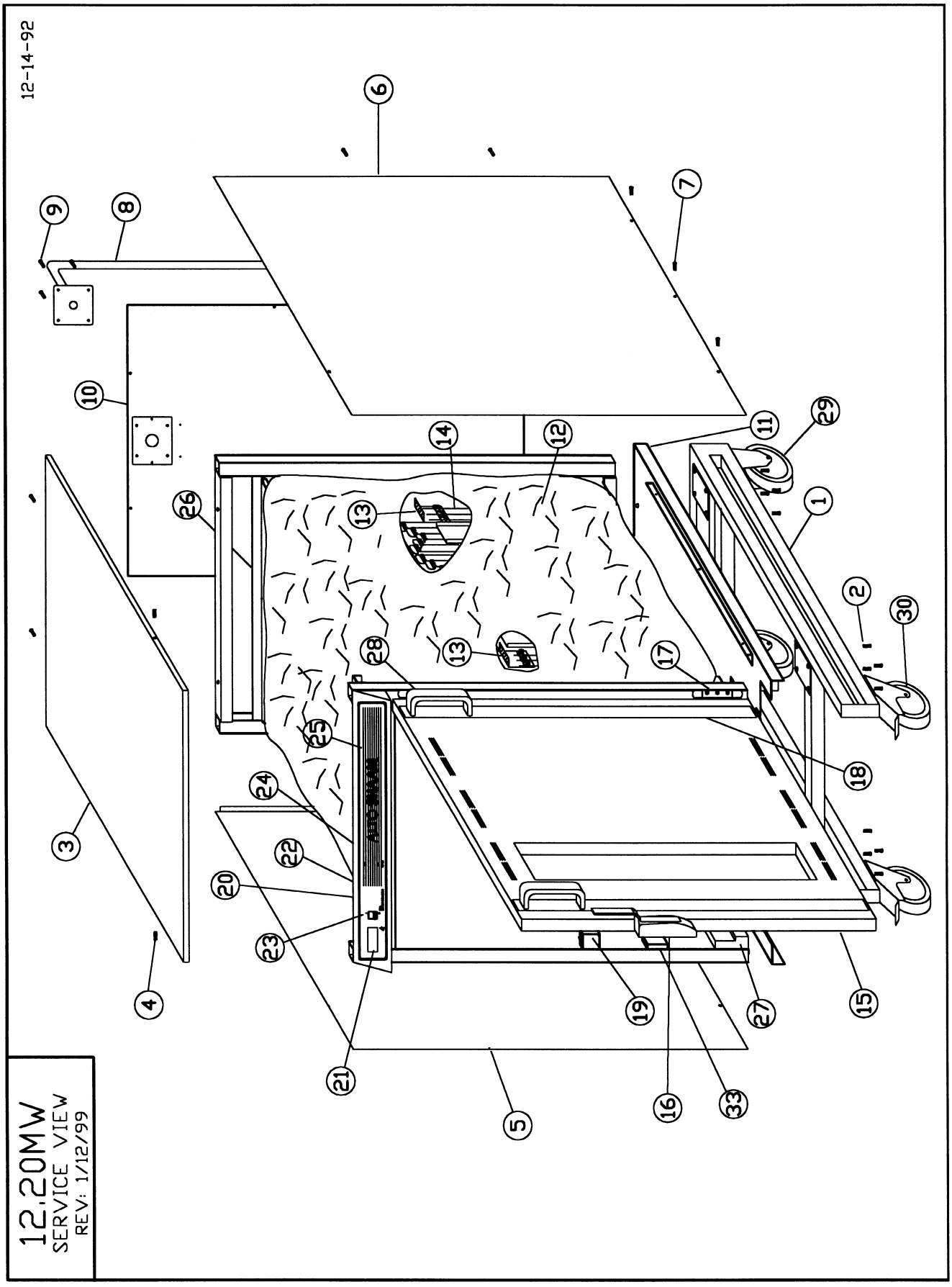
12/8/05 DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. BASE	1	15648
2. BASE MOUNTING SCREWS	16	SC-2351
3. TOP ASSEMBLY	1	14595
4. TOP MOUNTING SCREWS	4	SC-2425
5. CASING, LEFT-HAND	1	13681
6. CASING, RIGHT-HAND	1	13680
7. CASING MOUNTING SCREWS	10	SC-2425
8. CORD	1	CD-3588
CORDSET, 230V, (TYPE HO7 RN-F)	1	CD-3922
– FILTER (230V only)	1	FI-33225
9. CORD PLATE MOUNTING SCREWS	4	SC-2425
10. CASING BACK	1	11669
CASING BACK MOUNTING SCREWS	2	SC-2425
INSULATION		
— 25.5" x 116' (648mm x 35m)	.8	IN-2381
11. BOTTOM	1	14594
BOTTOM MOUNTING NUTS	4	NU-2866
BOTTOM MOUNTING WASHERS	4	WS-2867
12. TUBE INSULATION		
– 25.5"x 73' (711mm x 22m)	2	IN-22364
13. CABLE CONNECTION HARDWARE		
14. HEATING CABLE (LENGTH): 198' (60m)	1	CB-3045
15. DOOR ASSEMBLY	1	5003873
— DOOR GASKET	1	GS-22587
16. DOOR HANDLE	1	HD-25278
17. DOOR HINGE (1 Pair)	1	HG-22338
DOOR HINGE MOUNTING SCREWS	12	SC-2072
18. DOOR OVERLAY	2	PE-22336
19. SENSOR	1	SN-33540
— METAL SENSOR GUARD	1	1493
— TEFLON MOUNTING BLOCK	1	BK-24427
— BLOCK MOUNTING SCREWS	2	SC-2239
— T-BLOCK	1	BK-33546
20. SOLID STATE RELAY	1	RL-3736
— HEAT SINK	1	HE-23421
21. THERMOSTAT	1	TT-33563
22. TRANSFORMER, 208-240V, 230V	1	TN-3935
23. POWER SWITCH	1	SW-3887
FILTER, 230V ONLY	1	FI-33225
24. FUSE, 1 AMP, 208-240V, 230V	2	FU-33097
FUSE BLOCK, 208-240V, 230V	1	FU-3772
25. CONTROL PANEL OVERLAY	1	PE-24080
26. POWER TERMINAL BLOCK	1	BK-3019
27. GUIDE BLOCK, LEFT-HAND	1	BK-22044
GUIDE BLOCK, RIGHT-HAND	1	BK-22045
— GUIDE BLOCK MOUNTING SCREWS	4	SC-2567
28. LEG	4	LG-22341
HOLE PLUG	4	PG-3848
LEG COVER	4	11899
29. ROLL-IN CART (NOT SHOWN)	1	5814
30. STAINLESS STEEL WIRE SHELVES (NOT SHOWN) OPTION		SH-22473
31. GUIDE BLOCK (GAS CART) (NOT SHOWN)	2	BK-24077

MODEL 12•20MW

12/8/05 DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. BASE	1	15648
2. BASE MOUNTING SCREWS	16	SC-2351
3. TOP ASSEMBLY	1	14595
4. TOP MOUNTING SCREWS	4	SC-2425
5. CASING, LEFT-HAND	1	13681
6. CASING, RIGHT-HAND	1	13680
7. CASING MOUNTING SCREWS	10	SC-2425
8. CORD	1	CD-3588
CORDSET, 230V, (TYPE HO7 RN-F)	1	CD-3922
– FILTER (230V only)	1	FI-33225
9. CORD PLATE MOUNTING SCREWS	4	SC-2425
10. CASING BACK	1	11669
CASING BACK MOUNTING SCREWS	2	SC-2425
INSULATION		
— 25.5" x 116' (648mm x 35m)	.8	IN-2381
11. BOTTOM	1	14594
BOTTOM MOUNTING NUTS	4	NU-2866
BOTTOM MOUNTING WASHERS	4	WS-2867
12. TUBE INSULATION		
– 25.5"x 73' (711mm x 22m)	2	IN-22364
13. CABLE CONNECTION HARDWARE		
14. HEATING CABLE (length): 198' (60m)	1	CB-3045
15. DOOR ASSEMBLY	1	5003873
— DOOR GASKET	1	GS-22587
16. DOOR HANDLE	1	HD-25278
17. DOOR HINGE (1 Pair)	1	HG-22338
DOOR HINGE MOUNTING SCREWS	12	SC-2072
18. DOOR OVERLAY	2	PE-22336
19. SENSOR	1	SN-33540
— METAL SENSOR GUARD	1	1493
— TEFLON MOUNTING BLOCK`	1	BK-24427
— BLOCK MOUNTING SCREWS	2	SC-2239
— T-BLOCK	1	BK-33546
20. SOLID STATE RELAY	1	RL-3736
— HEAT SINK	1	HE-23421
21. THERMOSTAT	1	TT-33563
22. TRANSFORMER, 208-240V, 230V	1	TN-3935
23. POWER SWITCH	1	SW-3887
24. FUSE, 1 AMP, 208-240V, 230V	2	FU-33097
FUSE BLOCK, 208-240V, 230V	1	FU-3772
25. CONTROL PANEL OVERLAY	1	PE-24080
26. POWER TERMINAL BLOCK	1	BK-3019
27. GUIDE BLOCK, LEFT-HAND	1	BK-22044
GUIDE BLOCK, RIGHT-HAND	1	BK-22045
— GUIDE BLOCK MOUNTING SCREWS	4	SC-2567
28. TRANSPORT HANDLE	2	HD-22257
— HANDLE MOUNTING SCREWS	4	SC-22339
29. CASTER-RIGID	2	CS-22098
30. CASTER-SWIVEL WITH BRAKE	2	CS-22099
— CASTER WASHER-FLAT	4	WS-22095
— CASTER WASHER-LOCK	4	WS-22096
— CASTER CAP NUT	4	NU-22097
31. ROLL-IN CART (NOT SHOWN)	1	5814
32. STAINLESS STEEL WIRE SHELVES (NOT SHOWN) OPTION		SH-22473
33. GUIDE BLOCK (GAS CART) (NOT SHOWN)	2	BK-24077

SERVICE VIEW • Following pages


12-14-92
12,20W
SERVICE VIEW
REV: 1/12/99


12-14-92
12.20MW
SERVICE VIEW
REV: 1/12/99

SERVICE

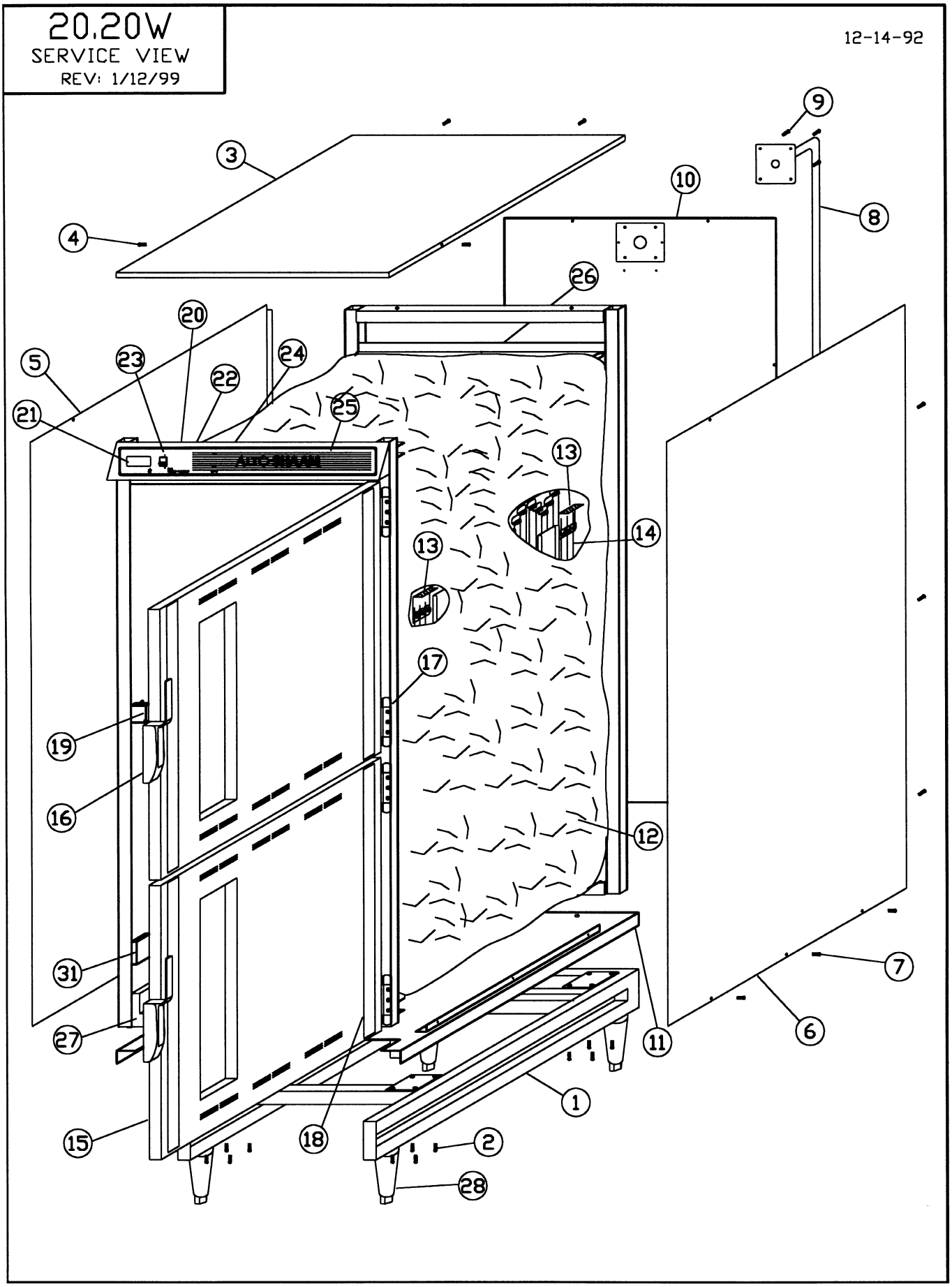
MODEL 20•20W

12/8/05 DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. BASE	1	15648
2. BASE MOUNTING SCREWS	16	SC-2351
3. TOP ASSEMBLY	1	14595
4. TOP MOUNTING SCREWS	4	SC-2425
5. CASING, LEFT-HAND	1	13683
6. CASING, RIGHT-HAND	1	13682
7. CASING MOUNTING SCREWS	12	SC-2425
8. CORD	1	CD-3588
CORDSET, 230V, (TYPE HO7 RN-F)	1	CD-3922
– FILTER (230V only)	1	FI-33225
9. CORD PLATE MOUNTING SCREWS	4	SC-2425
10. CASING BACK	1	11670
CASING BACK MOUNTING SCREWS	2	SC-2425
INSULATION		
— 25.5" x 116' (648mm x 35m)	6.1	IN-2381
11. BOTTOM	1	14594
BOTTOM MOUNTING NUTS	4	NU-2866
BOTTOM MOUNTING WASHERS	4	WS-2867
12. TUBE INSULATION		
– 25.5"x 73' (711mm x 22m)	15.2	IN-22364
13. CABLE CONNECTION HARDWARE		
14. HEATING CABLE (length): 332' (101193mm)	1	CB-3045
15. DOOR ASSEMBLY	2	5003814
— DOOR GASKET	2	GS-22588
16. DOOR HANDLE	2	HD-25278
17. DOOR HINGE (1 Pair)	2	HG-22338
DOOR HINGE MOUNTING SCREWS	24	SC-2072
18. DOOR OVERLAY	4	PE-22337
19. SENSOR	1	SN-33540
— METAL SENSOR GUARD	1	1493
— TEFLON MOUNTING BLOCK	1	BK-24427
— BLOCK MOUNTING SCREWS	2	SC-2239
— T-BLOCK	1	BK-33546
20. SOLID STATE RELAY	1	RL-3736
— HEAT SINK	1	HE-23421
21. THERMOSTAT	1	TT-33563
22. TRANSFORMER, 208-240V, 230V	1	TN-3935
23. POWER SWITCH	1	SW-3887
24. FUSE, 1 AMP, 208-240V, 230V	2	FU-33097
FUSE BLOCK, 208-240V, 230V	1	FU-3772
25. CONTROL PANEL OVERLAY	1	PE-24080
26. POWER TERMINAL BLOCK	1	BK-3019
27. GUIDE BLOCK, LEFT-HAND	1	BK-22044
GUIDE BLOCK, RIGHT-HAND	1	BK-22045
— GUIDE BLOCK MOUNTING SCREWS	4	SC-2567
28. LEG	4	LG-22341
HOLE PLUG	4	PG-3848
LEG COVER	4	11899
29. ROLL-IN CART (NOT SHOWN)	1	5815
ROLL-IN CART (MARINE VERSION) (NOT SHOWN)	1	15656
30. S/S WIRE SHELVES (NOT SHOWN) OPTION		SH-22473
31. GUIDE BLOCK (GAS CART)	2	BK-24077

MODEL 20•20MW

12/8/05 DESCRIPTION	UNIT QUANTITY	ALTO-SHAAM PART NUMBER
1. BASE	1	15648
2. BASE MOUNTING SCREWS	16	SC-2351
3. TOP ASSEMBLY	1	14595
4. TOP MOUNTING SCREWS	4	SC-2425
5. CASING, LEFT-HAND	1	13683
6. CASING, RIGHT-HAND	1	13682
7. CASING MOUNTING SCREWS	12	SC-2425
8. CORD	1	CD-3588
CORDSET, 230V, (TYPE HO7 RN-F)	1	CD-3922
– FILTER (230V only)	1	FI-33225
9. CORD PLATE MOUNTING SCREWS	4	SC-2425
10. CASING BACK	1	11670
CASING BACK MOUNTING SCREWS	2	SC-2425
INSULATION		
— 25.5" x 116' (648mm x 35m)	6.1	IN-2381
11. BOTTOM	1	14594
BOTTOM MOUNTING NUTS	4	NU-2866
BOTTOM MOUNTING WASHERS	4	WS-2867
12. TUBE INSULATION		
– 25.5"x 73' (711mm x 22m)	15.2	IN-22364
13. CABLE CONNECTION HARDWARE		
14. HEATING CABLE (length): 332' (101193mm)	1	CB-3045
15. DOOR ASSEMBLY	2	5003814
— DOOR GASKET	2	GS-22588
16. DOOR HANDLE	2	HD-25278
17. DOOR HINGE (1 Pair)	2	HG-22338
DOOR HINGE MOUNTING SCREWS	24	SC-2072
18. DOOR OVERLAY	4	PE-22337
19. SENSOR	1	SN-33540
— METAL SENSOR GUARD	1	1493
— TEFLON MOUNTING BLOCK	1	BK-24427
— BLOCK MOUNTING SCREWS	2	SC-2239
— T-BLOCK	1	BK-33546
20. SOLID STATE RELAY	1	RL-3736
— HEAT SINK	1	HE-23421
21. THERMOSTAT	1	TT-33563
22. TRANSFORMER, 208-240V, 230V	1	TN-3935
23. POWER SWITCH	1	SW-3887
24. FUSE, 1 AMP, 208-240V, 230V	2	FU-33097
FUSE BLOCK, 208-240V, 230V	1	FU-3772
25. CONTROL PANEL OVERLAY	1	PE-24080
26. POWER TERMINAL BLOCK	1	BK-3019
27. GUIDE BLOCK, LEFT-HAND	1	BK-22044
GUIDE BLOCK, RIGHT-HAND	1	BK-22045
— GUIDE BLOCK MOUNTING SCREWS	4	SC-2567
28. TRANSPORT HANDLE	2	HD-22257
— HANDLE MOUNTING SCREWS	4	SC-22339
29. CASTER-RIGID	2	CS-22098
30. CASTER-SWIVEL WITH BRAKE	2	CS-22099
— CASTER WASHER-FLAT	4	WS-22095
— CASTER WASHER-LOCK	4	WS-22096
— CASTER CAP NUT	4	NU-22097
31. ROLL-IN CART (NOT SHOWN)	1	5815
ROLL-IN CART (MARINE VERSION)(NOT SHOWN)	1	15656
32. S/S WIRE SHELVES (NOT SHOWN) OPTION		SH-22473
33. GUIDE BLOCK (GAS CART)	2	BK-24077

SERVICE VIEW • following pages


20.20W
SERVICE VIEW
REV: 1/12/99
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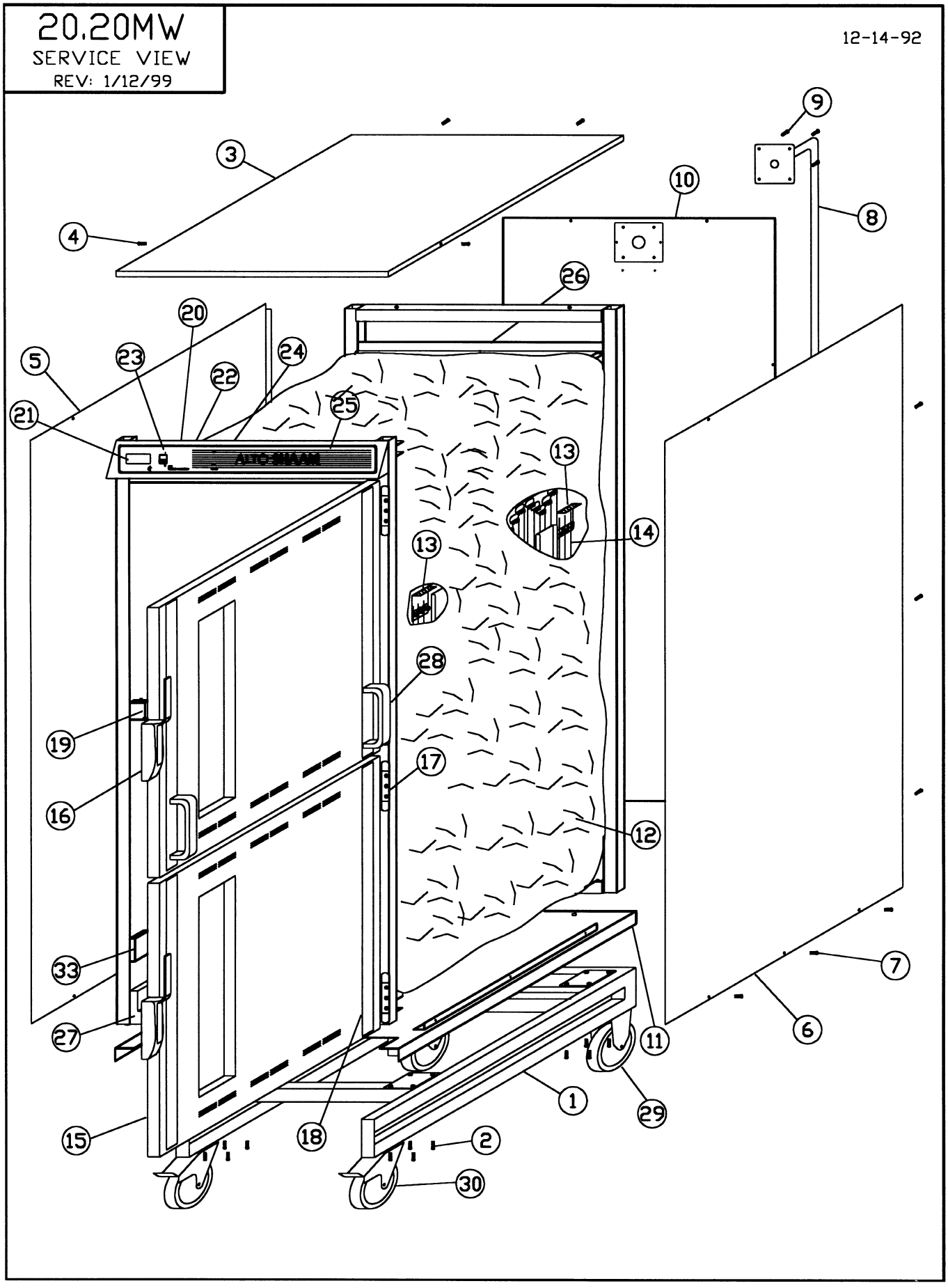
20.20MW
SERVICE VIEW
REV: 1/12/99
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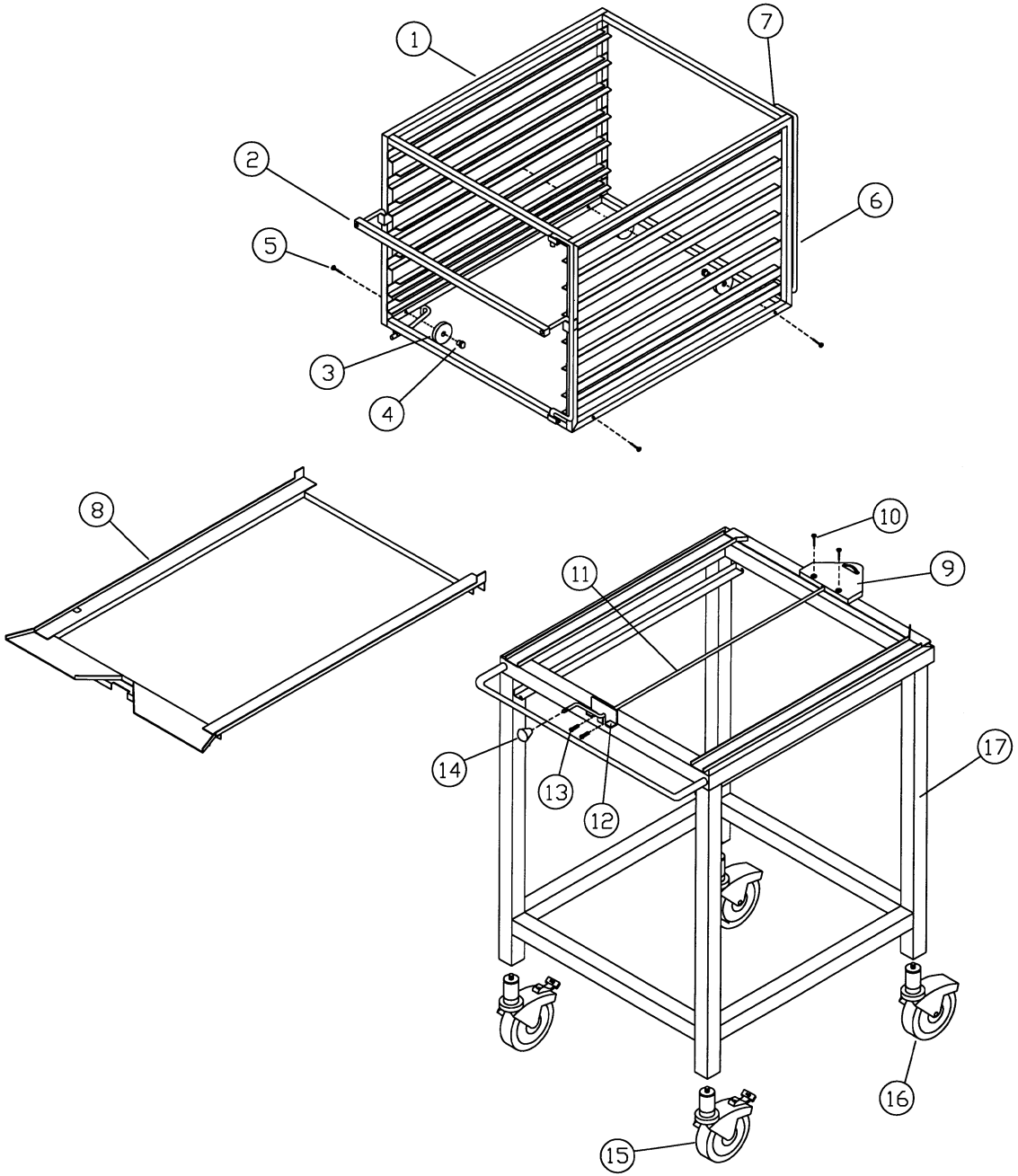

RACK MANAGEMENT
TROLLEY SYSTEM
FOR 7.14

PAN RACK ASSB. #15639

		PART #	QTY.
1.	BASE FRAME	(14586)	1
2.	HANDLE ASSB.	(14184)	1
3.	WHEELS	(WH-23034)	4
4.	WHEEL AXIS	(WH-23035)	4
5.	WHEEL SCREW	(SC-23868)	4
6.	PAN LOCK	(LK-23962)	2
7.	LOCK SCREW	(SC-22268)	2

RACK TRACK ASSB. #14582

8.	RACK TRACK ASB.	(14582)	1

NOTE: FOR QUICKCHILLER MODEL QC-40, REFER TO QC-40 SERVICE PARTS LIST FOR RACK TRACK PART #.

BASE TROLLEY ASSB. #15635

9.	GUIDE BLOCK	(BK-23020)	1
10.	GUIDE SCREW	(SC-2713)	2
11	LOCK ASSB.	(14580)	1
12.	SUPPORT BRACE	(12927)	1
13.	BRACE SCREW	(SC-2425)	2
14.	LEVER KNOB	(KN-23047)	1
15.	LOCKING CASTER	(CS-23050)	2
16.	PLAIN CASTER	(CS-23051)	2
17.	BASE ASSB.	(14579)	1

REV: 05/03/00
ECO #2880
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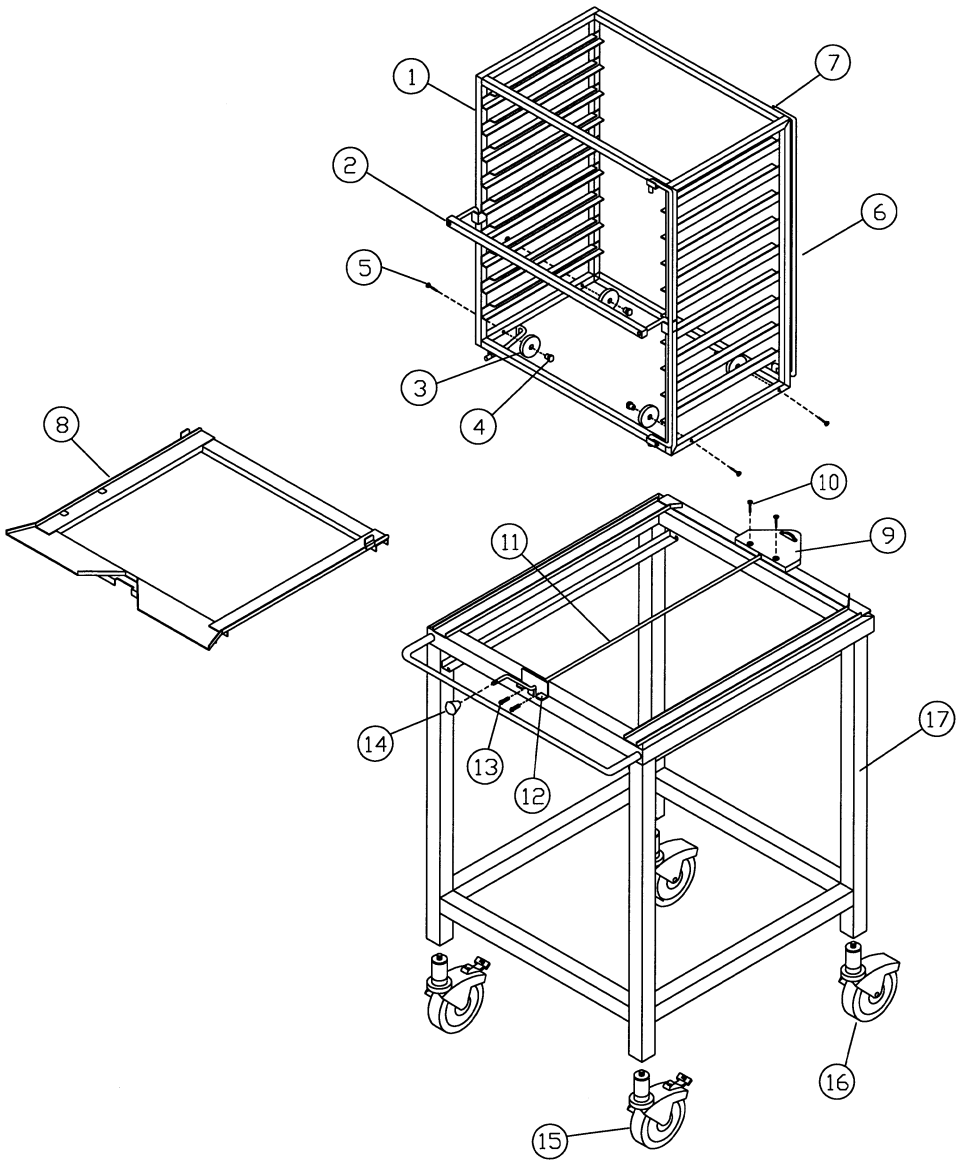

RACK MANAGEMENT
TROLLEY SYSTEM
FOR 10.10

PAN RACK ASSB. #15637

		PART #	QTY.
1.	BASE FRAME	(14584)	1
2.	HANDLE ASSB.	(14184)	1
3.	WHEELS	(WH-23034)	4
4.	WHEEL AXIS	(WH-23035)	4
5.	WHEEL SCREW	(SC-23868)	4
6.	PAN LOCK	(LK-23065)	2
7.	LOCK SCREW	(SC-22268)	2

RACK TRACK ASSB. #14581

8.	RACK TRACK ASB.	(14581)	1

NOTE: FOR QUICKCHILLER MODEL QC-40, REFER TO QC-40 SERVICE PARTS LIST FOR RACK TRACK PART #.

BASE TROLLEY ASSB. #15635

9.	GUIDE BLOCK	(BK-23020)	1
10.	GUIDE SCREW	(SC-2713)	2
11	LOCK ASSB.	(14580)	1
12.	SUPPORT BRACE	(12927)	1
13.	BRACE SCREW	(SC-2425)	2
14.	LEVER KNOB	(KN-23047)	1
15.	LOCKING CASTER	(CS-23050)	2
16.	PLAIN CASTER	(CS-23051)	2
17.	BASE ASSB.	(14579)	1

REV: 05/03/00
ECO #3223
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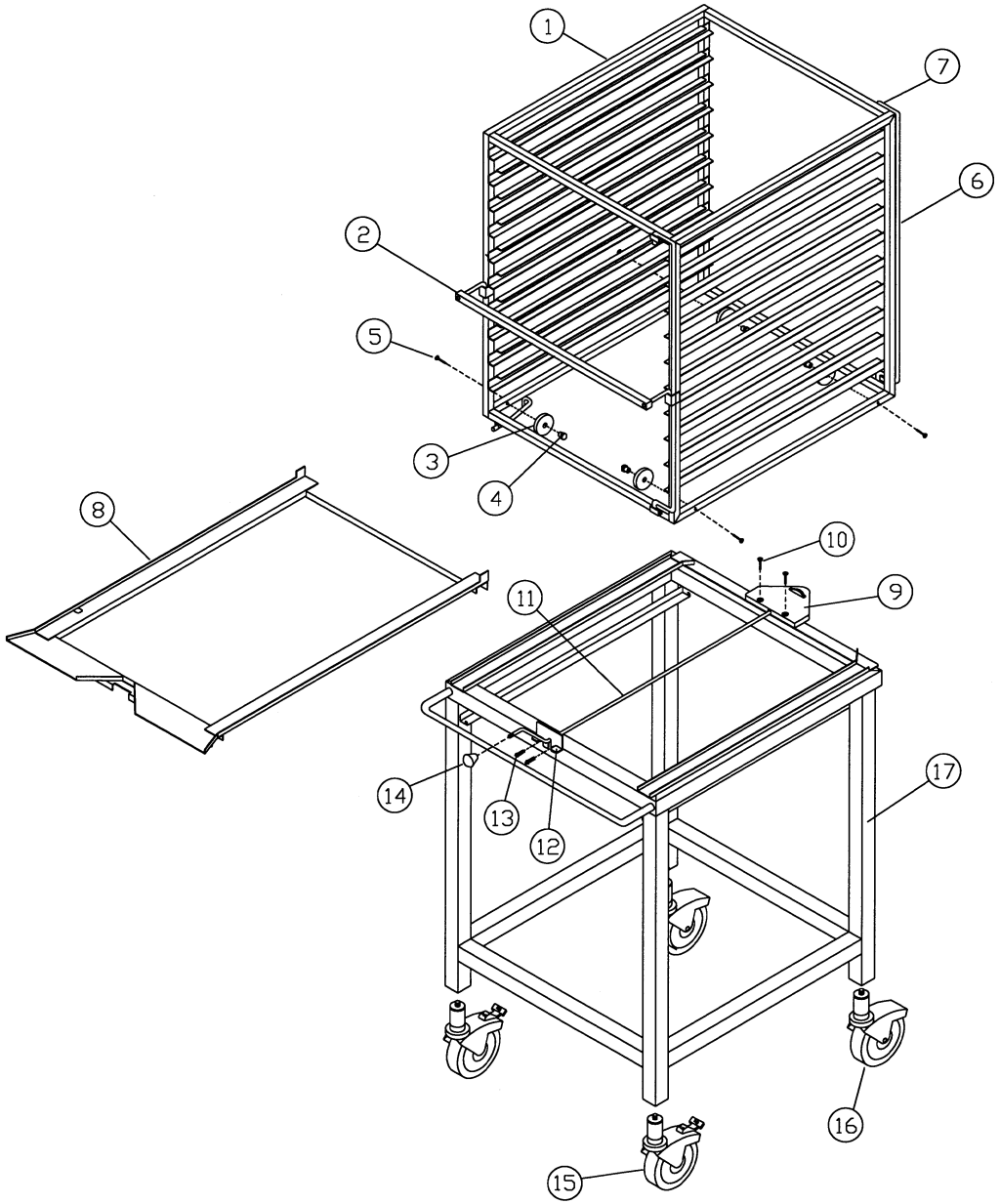


RACK MANAGEMENT
TROLLEY SYSTEM
FOR 10.18, 10.18W

PAN RACK ASSB. #15638

		PART #	QTY.
1.	BASE FRAME	(14585)	1
2.	HANDLE ASSB.	(14184)	1
3.	WHEELS	(WH-23034)	4
4.	WHEEL AXIS	(WH-23035)	4
5.	WHEEL SCREW	(SC-23868)	4
6.	PAN LOCK	(LK-23029)	2
7.	LOCK SCREW	(SC-22268)	2

RACK TRACK ASSB. #14582

8.	RACK TRACK ASB.	(14582)	1

NOTE: FOR QUICKCHILLER MODEL QC-40, REFER TO QC-40 SERVICE PARTS LIST FOR RACK TRACK PART #.

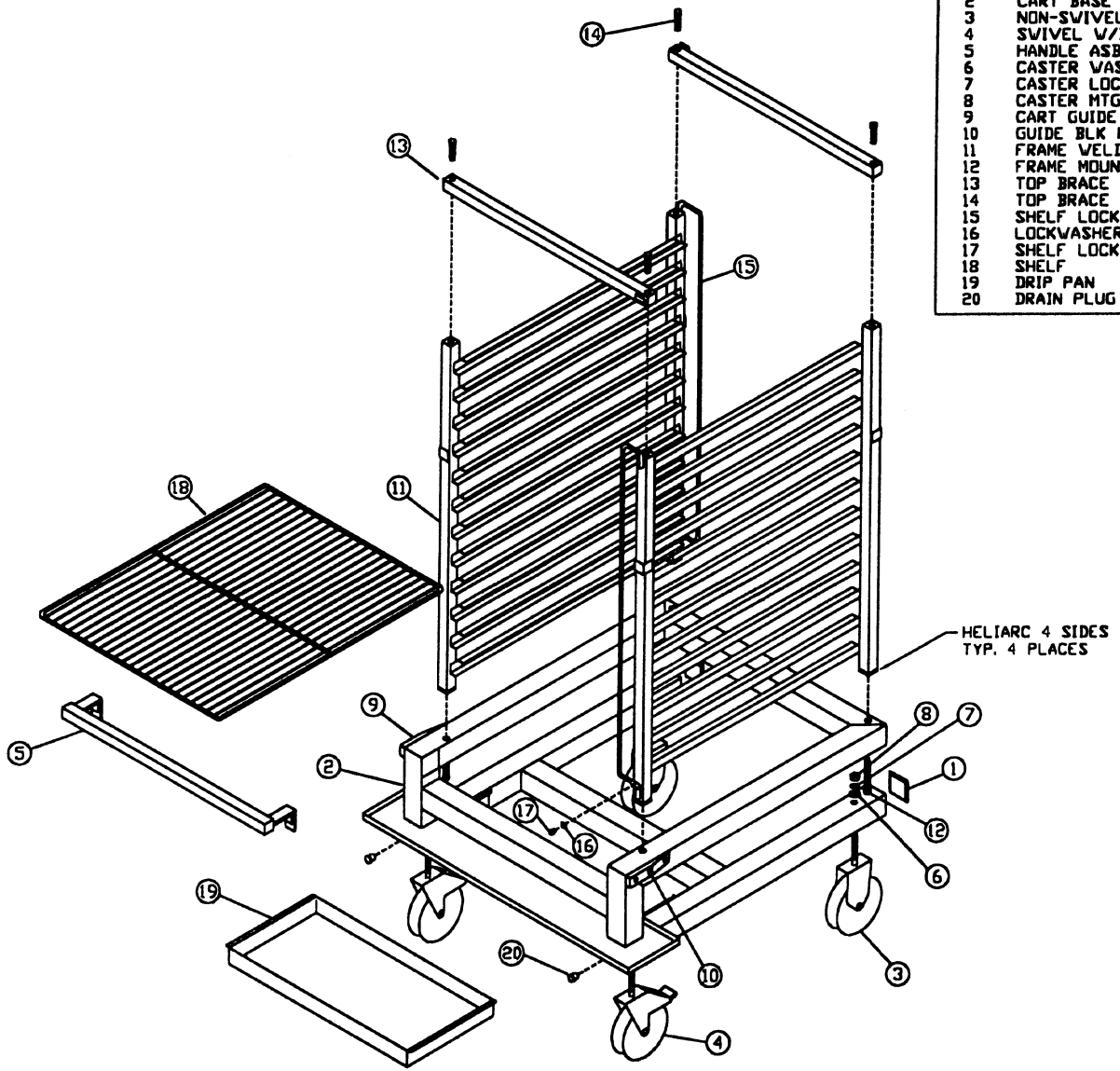
BASE TROLLEY ASSB. #15635

9.	GUIDE BLOCK	(BK-23020)	1
10.	GUIDE SCREW	(SC-2713)	2
11	LOCK ASSB.	(14580)	1
12.	SUPPORT BRACE	(12927)	1
13.	BRACE SCREW	(SC-2425)	2
14.	LEVER KNOB	(KN-23047)	1
15.	LOCKING CASTER	(CS-23050)	2
16.	PLAIN CASTER	(CS-23051)	2
17.	BASE ASSB.	(14579)	1

REV: 05/03/00
ECO #2880
I:\ENG\PROD\SM\RMTS18.DWG

ASSEMBLED
12.20W TROLLEY PARTS LIST

ITEM	DESCRIPTION	QUAN	A-S PART No.
1	TUBE END CAP	2	CP-22101
2	CART BASE	1	FR-22714
3	NON-SWIVEL CASTER	2	CS-23126
4	SWIVEL W/BRAKE CASTER	2	CS-23127
5	HANDLE ASB	1	FR-22715
6	CASTER WASHER	4	WS-22095
7	CASTER LOCK WASHER	4	WS-22096
8	CASTER MTG NUT	4	NU-22097
9	CART GUIDE BLOCK	2	BK-22100
10	GUIDE BLK MTG. SCREWS	6	SC-2072
11	FRAME WELD	2	FR-22717
12	FRAME MOUNTING SCREW	4	SC-22554
13	TOP BRACE WELD	2	FR-22716
14	TOP BRACE SCREW	4	SC-22553
15	SHELF LOCK	2	LK-22555
16	LOCKWASHERS	2	WS-22300
17	SHELF LOCK MTG SCREWS	2	SC-22500
18	SHELF	6	SH-22473
19	DRIP PAN	1	11747
20	DRAIN PLUG	2	PG-3344

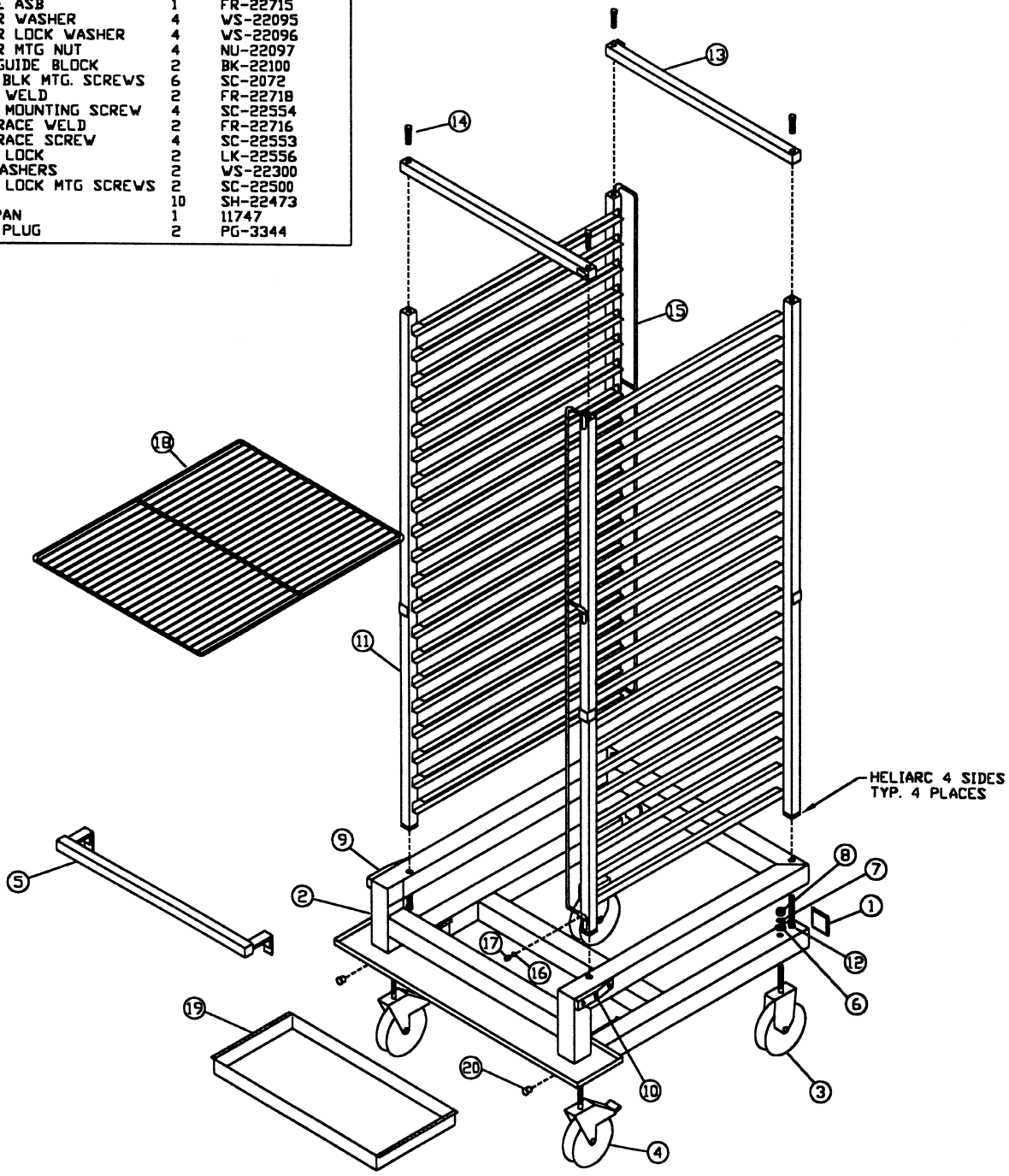


DRW. A-5814

1/16" = 1" 4-18-97

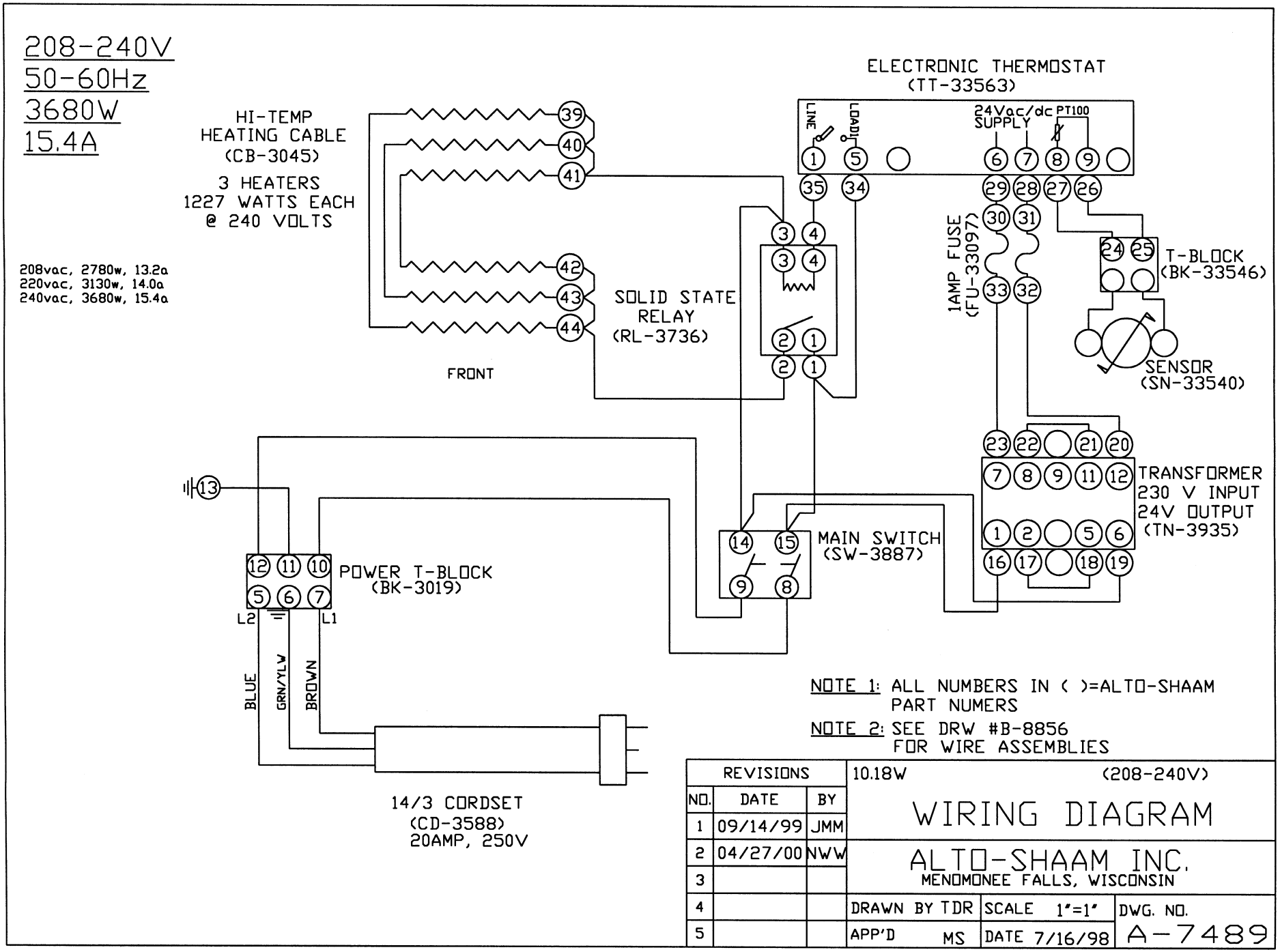
ASSEMBLED
20.20W TROLLEY PARTS LIST

ITEM	DESCRIPTION	QUAN	A-S PART No.
1	TUBE END CAP	2	CP-22101
2	CART BASE	1	FR-22714
3	NON-SWIVEL CASTER	2	CS-23126
4	SWIVEL W/BRAKE CASTER	2	CS-23127
5	HANDLE ASB	1	FR-22715
6	CASTER WASHER	4	WS-22095
7	CASTER LOCK WASHER	4	WS-22096
8	CASTER MTG NUT	4	NU-22097
9	CART GUIDE BLOCK	2	BK-22100
10	GUIDE BLK MTG. SCREWS	6	SC-2072
11	FRAME WELD	2	FR-22718
12	FRAME MOUNTING SCREW	4	SC-22554
13	TOP BRACE WELD	2	FR-22716
14	TOP BRACE SCREW	4	SC-22553
15	SHELF LOCK	2	LK-22556
16	LOCKWASHERS	2	WS-22300
17	SHELF LOCK MTG SCREWS	2	SC-22500
18	SHELF	10	SH-22473
19	DRIP PAN	1	11747
20	DRAIN PLUG	2	PG-3344



DRW. A-5815

1/16" = 1" 4-18-97



NOTE 1: ALL NUMBERS IN ( )=ALTO-SHAAM PART NUMERS

NOTE 2: SEE DRW #B-8856 FOR WIRE ASSEMBLIES

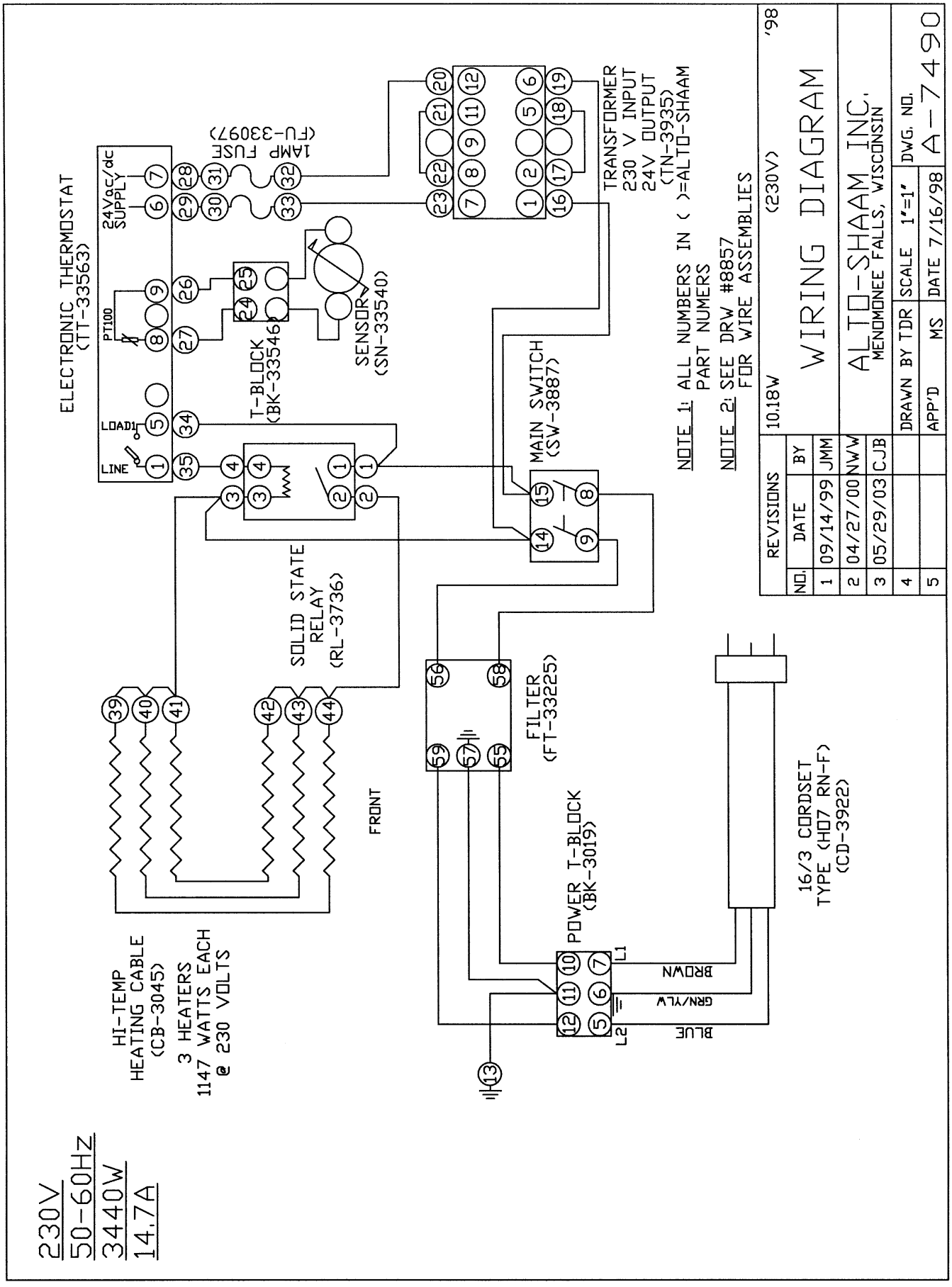
REVISIONS		
NO.	DATE	BY
1	09/14/99	JMM
2	04/27/00	NWW
3		
4		
5		

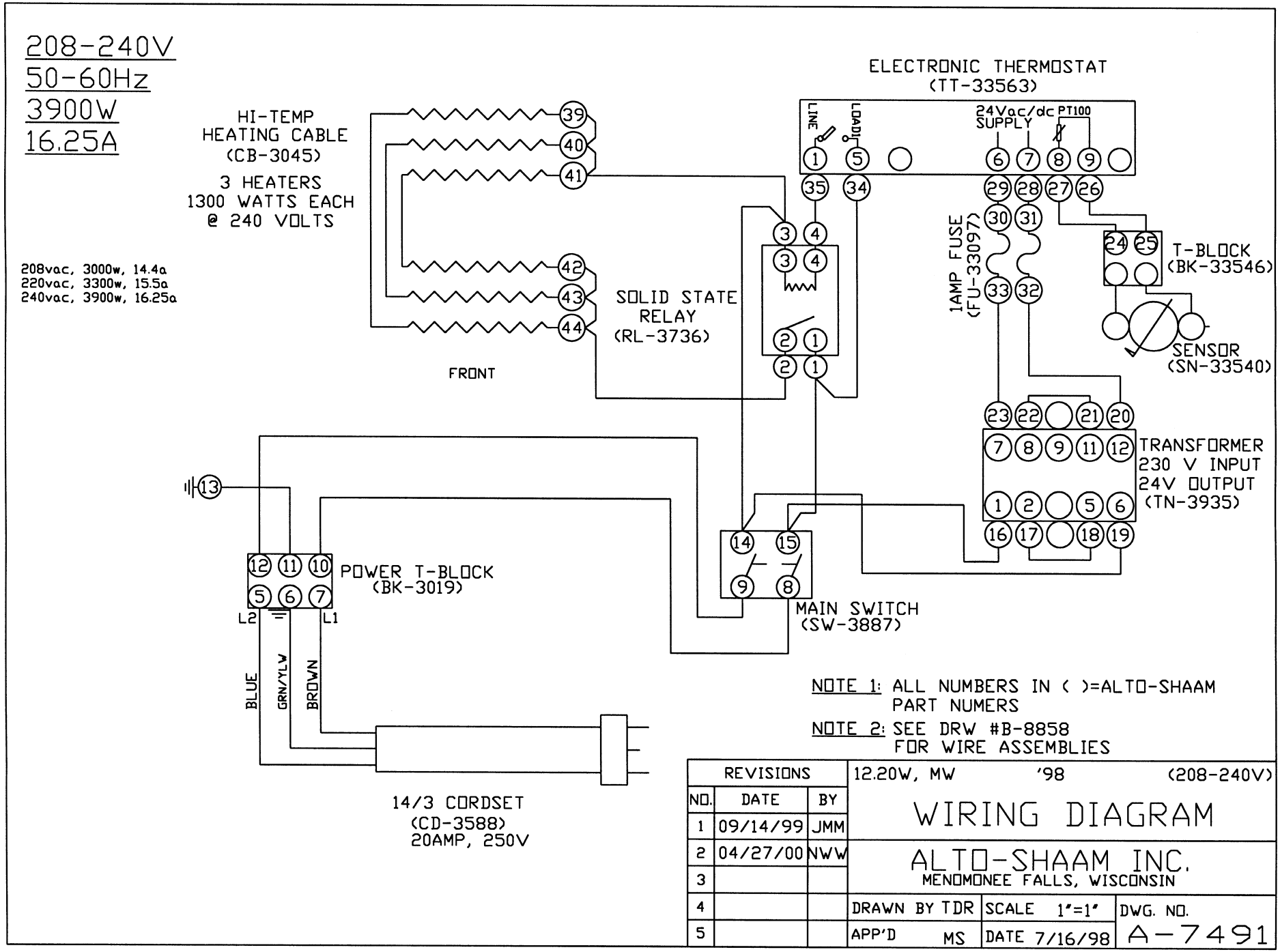
10.18W (208-240V)

WIRING DIAGRAM

ALTO-SHAAM INC.
MENOMONEE FALLS, WISCONSIN

DRAWN BY TDR	SCALE 1"=1"	DWG. NO.
APP'D MS	DATE 7/16/98	A-7489


230V
50-60Hz
3440W
14.7A
ELECTRONIC THERMOSTAT
(TT-33563)
24Vac/dc
SUPPLY
PT100
LOAD1
LINE
1AMP FUSE
(FU-33097)
T-BLOCK
(BK-33546)
SENSOR
(SN-33540)
TRANSFORMER
230 V INPUT
24V OUTPUT
(TN-3935)
NOTE 1: ALL NUMBERS IN ( )=ALTO-SHAAM
PART NUMERS
NOTE 2: SEE DRW #8857
FOR WIRE ASSEMBLIES
MAIN SWITCH
(SW-3887)
SOLID STATE
RELAY
(RL-3736)
FILTER
(FT-33225)
POWER T-BLOCK
(BK-3019)
HI-TEMP
HEATING CABLE
(CB-3045)
3 HEATERS
1147 WATTS EACH
@ 230 VOLTS
FRONT
16/3 CORDSET
TYPE (HO7 RN-F)
(CD-3922)
BROWN
GRN/YLW
BLUE
L1
L2
REVISIONS
NO. DATE BY
1 09/14/99 JMM
2 04/27/00 NWW
3 05/29/03 CJB
4
5
10.18W
(230V)
'98
WIRING DIAGRAM
ALTO-SHAAM INC.
MENOMONEE FALLS, WISCONSIN
DRAWN BY TDR
APP'D MS
SCALE 1"=1"
DATE 7/16/98
DWG. NO.
A-7490



NOTE 1: ALL NUMBERS IN ( )=ALTO-SHAAM PART NUMERS

NOTE 2: SEE DRW #B-8858 FOR WIRE ASSEMBLIES

REVISIONS		
NO.	DATE	BY
1	09/14/99	JMM
2	04/27/00	NWW
3		
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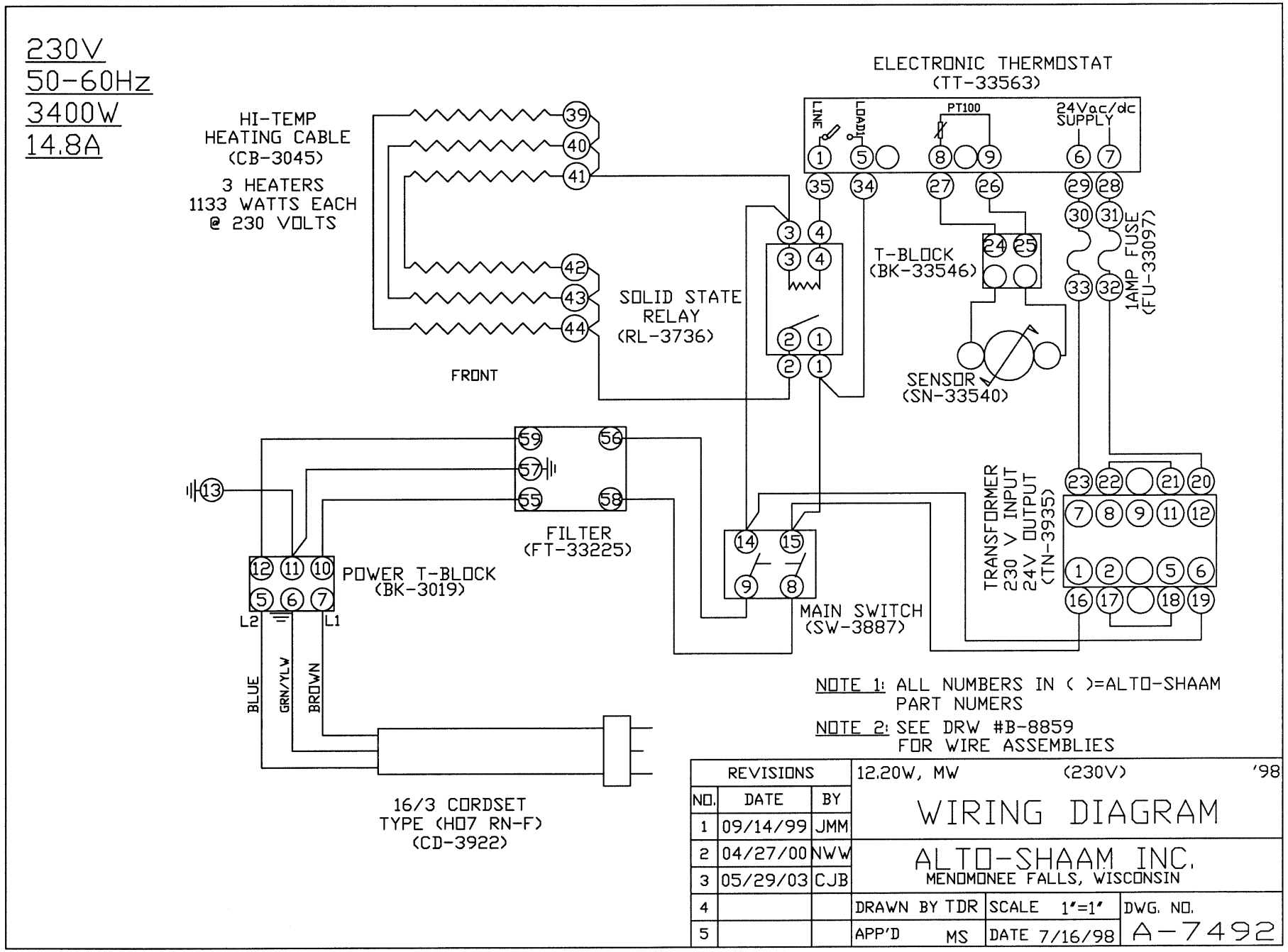
12.20W, MW '98 (208-240V)

WIRING DIAGRAM

ALTO-SHAAM INC.
MENOMONEE FALLS, WISCONSIN

DRAWN BY TDR	SCALE 1"=1"	DWG. NO.
APP'D MS	DATE 7/16/98	A-7491



REVISIONS		
NO.	DATE	BY
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2	04/27/00	NWW
3	05/29/03	CJB
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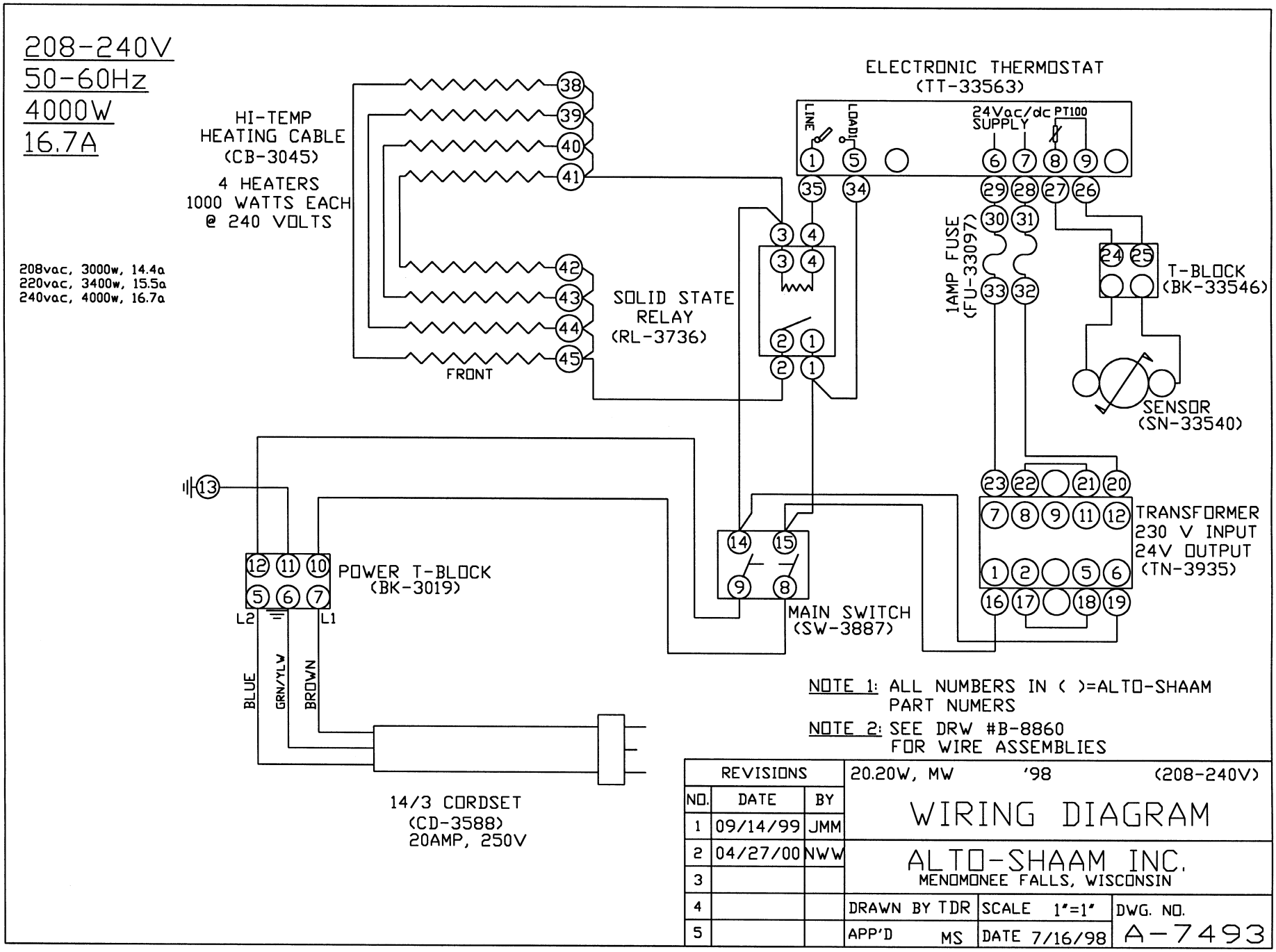
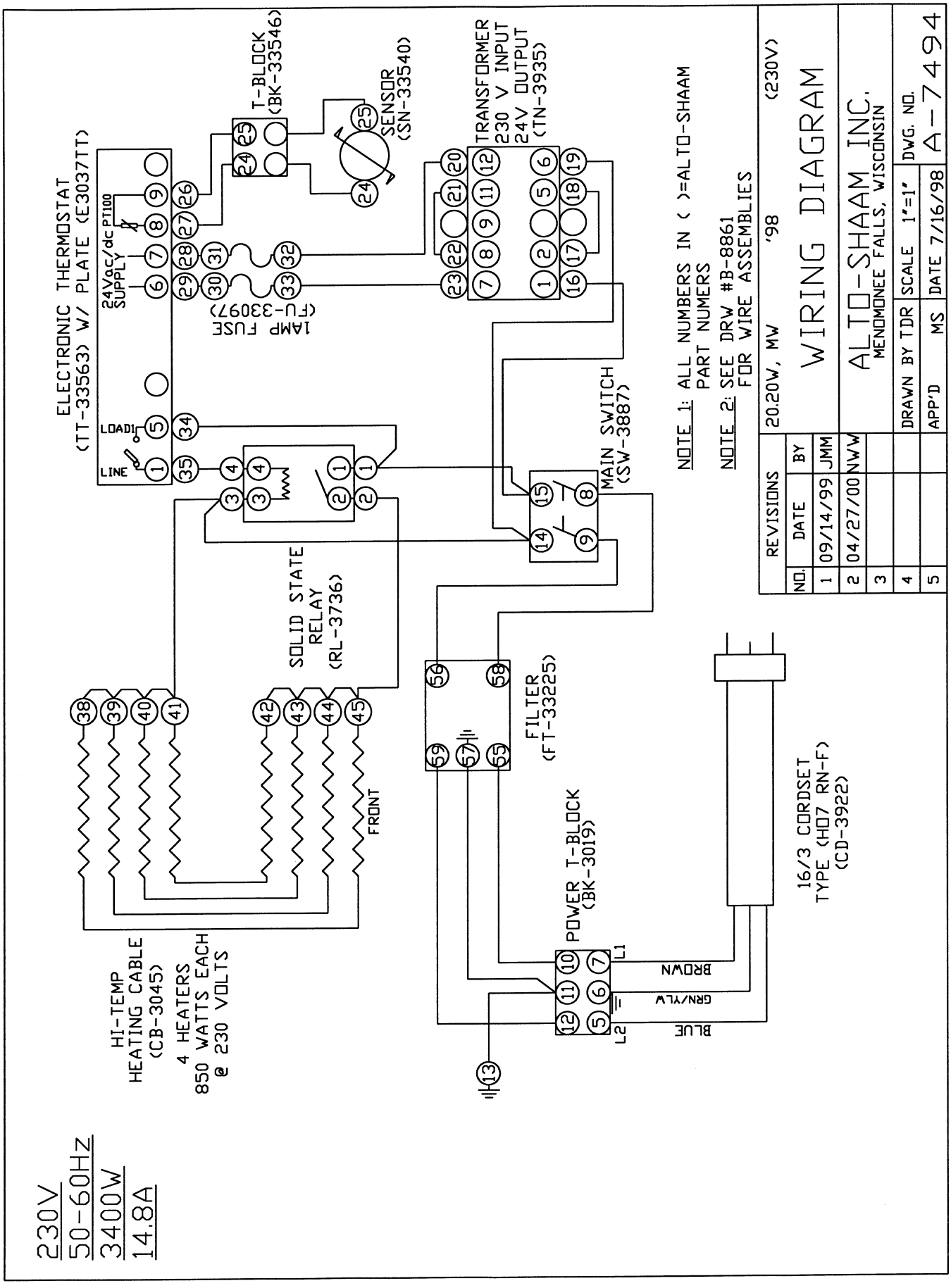
5		


208-240V
50-60Hz
4000W
16.7A
208vac, 3000w, 14.4a
220vac, 3400w, 15.5a
240vac, 4000w, 16.7a
HI-TEMP
HEATING CABLE
(CB-3045)
4 HEATERS
1000 WATTS EACH
@ 240 VOLTS
FRONT
ELECTRONIC THERMOSTAT
(TT-33563)
LINE
LOAD
24Vac/dc SUPPLY
PT100
SOLID STATE
RELAY
(RL-3736)
1AMP FUSE
(FU-33097)
T-BLOCK
(BK-33546)
SENSOR
(SN-33540)
TRANSFORMER
230 V INPUT
24V OUTPUT
(TN-3935)
POWER T-BLOCK
(BK-3019)
MAIN SWITCH
(SW-3887)
L2
L1
BLUE
GRN/YLW
BROWN
14/3 CORDSET
(CD-3588)
20AMP, 250V
NOTE 1: ALL NUMBERS IN ( )=ALTO-SHAAM PART NUMERS
NOTE 2: SEE DRW #B-8860 FOR WIRE ASSEMBLIES
REVISIONS
NO. DATE BY
1 09/14/99 JMM
2 04/27/00 NWW
3
4
5
20.20W, MW '98 (208-240V)
WIRING DIAGRAM
ALTO-SHAAM INC.
MENOMONEE FALLS, WISCONSIN
DRAWN BY TDR
SCALE 1"=1"
DWG. NO.
APP'D MS
DATE 7/16/98
A-7493


230V
50-60Hz
3400W
14.8A
ELECTRONIC THERMOSTAT
(TT-33563) W/ PLATE (E3037TT)
24Vac/dc PT100
SUPPLY
LOAD
LINE
1AMP FUSE
(FU-33097)
T-BLOCK
(BK-33546)
SENSOR
(SN-33540)
TRANSFORMER
230 V INPUT
24V OUTPUT
(TN-3935)
MAIN SWITCH
(SW-3887)
SOLID STATE
RELAY
(RL-3736)
FILTER
(FT-33225)
POWER T-BLOCK
(BK-3019)
L1
L2
BROWN
GRN/YLW
BLUE
FRONT
HI-TEMP
HEATING CABLE
(CB-3045)
4 HEATERS
850 WATTS EACH
@ 230 VOLTS
16/3 CORDSET
TYPE (H07 RN-F)
(CD-3922)
NOTE 1: ALL NUMBERS IN ( )=ALTO-SHAAM PART NUMERS
NOTE 2: SEE DRW #B-8861 FOR WIRE ASSEMBLIES
REVISIONS
NO. DATE BY
1 09/14/99 JMM
2 04/27/00 NWW
3
4
5
20.20W, MW '98 (230V)
WIRING DIAGRAM
ALTO-SHAAM INC.
MENOMONEE FALLS, WISCONSIN
DRAWN BY TDR
APP'D MS
SCALE 1"=1"
DATE 7/16/98
DWG. NO.
A-7494

TRANSPORTATION DAMAGE and CLAIMS

All Alto-Shaam equipment is sold F.O.B. shipping point, and when accepted by the carrier, such shipments become the property of the consignee.

Should damage occur in shipment, it is a matter between the carrier and the consignee. In such cases, the carrier is assumed to be responsible for the safe delivery of the merchandise, unless negligence can be established on the part of the shipper.

1. Make an immediate inspection while the equipment is still in the truck or immediately after it is moved to the receiving area. Do not wait until after the material is moved to a storage area.

2. Do not sign a delivery receipt or a freight bill until you have made a proper count and inspection of all merchandise received.

3. Note all damage to packages directly on the carrier's delivery receipt.

4. Make certain the driver signs this receipt. If he refuses to sign, make a notation of this refusal on the receipt.

5. If the driver refuses to allow inspection, write the following on the delivery receipt:
   Driver refuses to allow inspection of containers for visible damage.

6. Telephone the carrier's office immediately upon finding damage, and request an inspection. Mail a written confirmation of the time, date, and the person called.

7. Save any packages and packing material for further inspection by the carrier.

8. Promptly file a written claim with the carrier and attach copies of all supporting paperwork.

We will continue our policy of assisting our customers in collecting claims which have been properly filed and actively pursued. We cannot, however, file any damage claims for you, assume the responsibility of any claims, or accept deductions in payment for such claims.

ALTO-SHAAM® LIMITED WARRANTY

Alto-Shaam, Inc. warrants to the original purchaser that any original part that is found to be defective in material or workmanship will, at Alto-Shaam's option, subject to provisions hereinafter stated, be replaced with a new or rebuilt part.

The labor warranty remains in effect one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first. Alto-Shaam will bear normal labor charges performed during standard business hours, and excluding overtime, holiday rates or any additional fees.

The parts warranty remains in effect for one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

However, the heating element on Halo Heat® cook/hold ovens and the refrigeration compressor on Alto-Shaam Quickchillers™ are warranted for a period of five (5) years from installation. The labor warranty is the same as stated above; namely, for one (1) year from installation or fifteen (15) months from the shipping date, whichever occurs first.

THIS WARRANTY DOES NOT APPLY TO:

1. Calibration.
2. Replacement of light bulbs and/or the replacement of display case glass due to damage of any kind.
3. Equipment damage caused by accident, shipping, improper installation or alteration.
4. Equipment used under conditions of abuse, misuse, carelessness or abnormal conditions including, but not limited to, equipment subjected to harsh or inappropriate chemicals including, but not limited to, compounds containing chloride or quaternary salts, poor water quality, or equipment with missing or altered serial numbers.
5. Damage incurred as a direct result of poor water quality, inadequate maintenance of steam generators and/or surfaces affected by water quality. Water quality and required maintenance of steam generating equipment is the responsibility of the owner/operator.
6. Damage caused by use of any cleaning agent other than Alto-Shaam's Combitherm® Cleaner including, but not limited to, damage due to chlorine or other harmful chemicals. Use of Alto-Shaam's Combitherm® Cleaner on Combitherm® ovens is highly recommended.
7. Any losses or damage resulting from malfunction, including loss of product or consequential or incidental damages of any kind.
8. Equipment modified in any manner from original model, substitution of parts other than factory authorized parts, removal of any parts including legs, or addition of any parts.

This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. In no event shall Alto-Shaam be liable for loss of use, loss of revenue or profit, or loss of product, or for any indirect or consequential damages. No person except an officer of Alto-Shaam, Inc. is authorized to modify this warranty or to incur on behalf of Alto-Shaam any other obligation or liability in connection with Alto-Shaam equipment.

ALTO-SHAAM, INC.

RECORD THE MODEL AND SERIAL NUMBER OF THE APPLIANCE FOR EASY REFERENCE.
ALWAYS REFER TO BOTH MODEL AND SERIAL NUMBER IN ANY CONTACT WITH ALTO-SHAAM REGARDING THIS APPLIANCE.

Model: _____ Date Installed: _____
Voltage: _____ Purchased From: _____
Serial Number: _____ _____

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